

CALIFORNIA COASTAL COMMISSION

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ENVIRONMENTAL JUSTICE DRAFT POLICY

PUBLIC REVIEW DRAFT

PUBLIC COMMENT RECEIVED FROM

AUGUST 9TH, 2018 THROUGH NOVEMBER 7TH, 2018

From: Rich Everett [mailto:thinningapples@gmail.com]
Sent: Friday, August 10, 2018 9:26 AM
To: EnvironmentalJustice@Coastal
Subject: Input from concerned citizen

Coastal Commission:

Much of what you focus on is excellent and we support and appreciate all your work.

Our only recommendation is that you stay away from opening every single part of the Calif Coast to all public when the access is challenging in some cases does not exist today. Seems like you spend too much of your time and energy in this area. Lets focus on making what we have, the public access beaches, parking, facilities world class. Lets control the commercial development along the coast. Finally lets educate our visitors to the coast on how to treat, act, and respect our valuable coast line and oceans.

Rich Everett

Everett Family Farm
Soquel Cider

"Fine Organics From Seed to Core"

PO Box 308
Soquel, Ca. 95073
831 566 0472
EverettFamilyFarm@comcast.net

From: Lucia Casalnuovo <luciagalore@gmail.com>
Sent: Friday, September 7, 2018 1:32 PM
To: Christie, Sarah@Coastal; Carl, Dan@Coastal; Pearce, Kevin@Parks
Subject: environmental justice by Oceano Beach Community Association

Dear Sarah, Commissioners, Staff:

When you review and discuss the draft of your new Environmental Justice policy, please remember and consider the plight of Oceano, a small beach community on the central coast. Two million visitors drive every year through the heart of our beach community, Pier Avenue, on Oceano Beach, the Arroyo Grande Creek, and the Oceano Dunes. They endanger our children, trash our beach, impact our streets, block our driveways and mailboxes, pollute our air and water and nobody has ever asked our opinion about it.

The United States Environmental Protection Agency defines environmental justice as : the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies... It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work. I think Oceano is being discriminated against because, although it is a beach town, it is denied a safe beach access free from vehicles and it is not involved in the decision making process regarding the management of the Oceano Dunes State Vehicular Recreation Area (ODSVRA). In Oceano, we are mostly Latino and poor. Most of us lack knowledge, means, and skills to voice, let alone fight the environmental injustice done to us by letting vehicles drive through our community, on the beach, and dunes. While others enjoy themselves, we are forced to suffer from bad air quality, traffic congestion, and exclusion from the decision making process.

Therefore, when you review and discuss the draft of your new Environmental Justice policy, please remember and consider the plight of Oceano, a small beach community on the central coast. Thank you.

Lucia Casalnuovo
per Oceano Beach Community Association
1621 23rd Street
Oceano, Ca 93445
805 994-8580
www.oceanobeach.org



CALIFORNIA FARM BUREAU FEDERATION

GOVERNMENTAL AFFAIRS DIVISION

1127-11TH STREET, SUITE 626, SACRAMENTO, CA 95814 · PHONE (916) 446-4647

September 18, 2018

California Coastal Commission
Environmental Justice Team
45 Fremont Street, Suite 2000
San Francisco, CA 94105

RE: Draft Environmental Justice Policy

Dear Honorable Coastal Commissioners:

The California Farm Bureau Federation (Farm Bureau) writes in response to the draft *Environmental Justice Policy* released by the California Coastal Commission (Commission) on August 9th. Farm Bureau is a non-profit, voluntary organization whose purpose is to protect and promote agricultural interests throughout California and find solutions to the problems of the farm, the farm home and the rural community. Farm Bureau is California's largest farm organization, comprised of 53 county Farm Bureaus representing nearly 40,000 members from every coastal county. In representing a large majority of landholders and community members within the counties in the Commission's purview, we are disappointed to not have been considered a relevant stakeholder in the Commission's public engagement strategy related to the draft environmental justice policy.

As agriculture and coastal California are inextricably linked, we have been engaged for years to ensure the goals pertinent to environmental justice (EJ)—namely, clean water and air, sustainable environmental management, adaptation to climate change, affordable housing, thoughtful land use, nutrition, and stable employment—are adequately met. Our farmers, ranchers, dairymen and women, their families, and employees live and work in these communities and manage these issues daily. In short, EJ issues are our issues and only through inclusion and collaboration can we maintain agricultural productivity in a manner that's sensitive and responsive to the needs of our communities. These learned lessons may prove helpful in implementing a future Commission EJ Policy and re-position farmers and EJ advocates as partners, rather than adversaries. Finally, the Coastal Act, the Commission's governing charter, reiterates that agriculture plays an important role in California's coastline and charges the Commission as its protector. We, in exchange, want to be included as a relevant party in the protection of our communities. Agriculture must be a participant in this dialogue.

We respectfully encourage the Commission to see Farm Bureau as a willing contributor in the discussion of environmental justice and implore you to extend invitations to other agricultural interests to join in this important dialogue.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Roschen'.

Taylor Roschen
Policy Advocate, California Farm Bureau Federation

From: Andrew Salas [mailto:gabrielenoindians@yahoo.com]

Sent: Monday, September 24, 2018 10:27 PM

To: Selvaraj, Sumi@Coastal; Henrypedregon; Christina Swindall Martinez. Kizh Gabrieleno; Matt Teutimez.Kizh Gabrieleno; Vicky Goodwin; Richard Gradias

Cc: EnvironmentalJustice@Coastal

Subject: Re: Coastal Commission's Draft Environmental Justice Policy

We don't see anything of much concern. What we really want to see is the policy for tribal consultation. That one will need to be evaluated thoroughly.

Also some clarification-pg.12-13 Respecting Tribal Concerns. May need to specify 'lineal' or 'ancestral' descendants of an effected area. Don't forget to correct our tribal government name , Gabrieleño Band of Mission Indians Kizh Nation pronounces (keech) . Other than the clarifications and corrections it pretty good. Thank you

Sent from my iPhone

From: Lynn Ross [mailto:lrthinkgreen@gmail.com]

Sent: Tuesday, September 25, 2018 10:23 AM

To: EnvironmentalJustice@Coastal

Subject: Environmental Justice Policy: Smoke pollution on beaches should be stopped

California Coastal Commission Webinar directors:

Please include this issue in your discussion:

The EJP must include the fact that smoke prevents access for many people who cannot tolerate smoke in their lungs. Will you include it in your policy?

It seems like discrimination to knowingly prevent people from accessing the beaches who have breathing problems, or who are more vulnerable such as children and older adults. To travel from a smoke-polluted environment to a smoke-filled beach makes no sense.

Thank you,

Lynn Ross

From: Richard E.T. Sadowski [mailto:r.e.t.sadowski@gmail.com]
Sent: Sunday, October 07, 2018 7:33 PM
To: EnvironmentalJustice@Coastal
Subject: Comment on CCC Draft Environmental Justice Policy

October 7, 2018

Dear CCC Environmental Justice staff,

First and foremost, I would like to thank you all, for the work and talent that has gone into this Draft Environmental Justice Policy document.

The application of Environmental Justice (EJ) is predicated upon trust and accountability with the sociological impacts integrated into the practice and implementation of the policy.

It is a known fact that the most disadvantaged in communities around California bare the brunt of the health and environmental effects of Climate Change. The problem for those is exacerbated when dealing with Reginal and State regulators in addressing the environmental hazards in their neighborhoods. In disadvantaged and economically diverse communities, local politics continue to marginalize and ignore the needs of those less fortunate.

The CCC Environmental Justice Policy should be a global standard how we practice the art of humanity. The tread of justice needs to be laced into the ever increasing economic gap between the affluent and the impoverished. I believe that any successful EJ policy is going to require sustainable funding that weighs the long term benefits of investing in our future generations' economic and environmental benefits.

Sustainable funding for the CCC's EJ policy will be dependent upon State agency collaboration, cooperation and innovation. California's carbon cap and trade market is setting a pace for how we reduce our Greenhouse Gases (GHG) and is opening up fiscal opportunities for disadvantaged communities. With the affects of Climate Change, for example, extreme temperatures and urban heat zones, the value of coastal property is bound to rise. The more affluent invest and relocate to these coastal areas as part of the climate change migration phenomenon. In contrast, the citizens who have lived, worked and raised their families in these coastal climates are being displaced as a result of the transformation of neighborhoods from a lower to a higher economic value. These circumstances are compounded in areas where most of a community's disadvantaged are elderly or fixed and lower income residents.

The expense of Climate Change and Sea Level Rise (SLR) adaptation for coastal communities could heighten the displacement of the disadvantaged by increasing their living expenses for such things like sewer and water services. The CCC's EJ policy must have direct and continual engagement with local governments that are undertaking climate adaptation projects in their respective communities. Many cities don't have the resources or staff expertise to properly address the variables associated with Climate Change adaptation and Environmental Justice. This leads to a city's reliance on hired consultants, which could lead to opportunist enriching themselves by fleecing public funds with studies and analyzing impractical options for climate change adaptation.

The EJ policy must balance the environmental and economic aspects in protecting critical infrastructure like coastal Wastewater Treatment Plants (WWTP). Before a local agency embarks on a climate adaptation project the CCC EJ policy must distinguish when 'managed retreat of critical infrastructure is appropriate or if ' safeguarding' an existing or upgraded infrastructure is better suited. By the CCC engaging early with local staff and affected stakeholders , the risk of politicalization of climate adaptation are reduced.

The CCC's EJ policy must also be integrated into coastal communities Local Coastal Plan (LCP) and General Plan (GP) updates. By recognizing the intrinsic value of Environmentally Sensitive Habit Areas (ESHA) and the economic value of GHG sequestration by coastal flora, such as eelgrass, the CCC could help subsidize programs that help the disadvantaged in a community. These programs could be in collaboration with agencies like the Air Quality Resources Control Board, Strategic Growth Council (SGC) Affordable Housing and Sustainable Communities (AHSC) program, State Lands Commission and State Water Boards.

Once again, I sincerely would like to thank you for all your work and allowing me to comment on this important matter,

Richard E.T. Sadowski
Home-Front, Morro Bay

Sent from my iPad

From: larry truesdale [mailto:ltruesdale@gmail.com]
Sent: Monday, October 08, 2018 7:36 AM
To: r.e.t.sadowski@gmail.com
Cc: EnvironmentalJustice@Coastal
Subject: Re: Comment on CCC Draft Environmental Justice Policy

Looks great!

A minor, additional point for environmental Justice to consider is that the coastal businesses critical for the economic viability of coastal cities desperately need a labor force consisting of hourly workers. They are often lower paying jobs, but also essential for businesses. These workers generally can not live in the coastal area and are forced to commute long distances in their aged cars which are disproportionate polluters of the atmosphere. Here in Morro Bay, one business has discontinued their profitable breakfast service due to the inability to staff it. It turns out that their workers come from 45-60 minutes away and are needed at the restaurant before sunrise. Their workdays are excessively long and not compatible with family obligations. Many coastal communities that are distant from major metropolitan areas will be negatively impacted by their "isolation" while this isolation is an attraction for the affluent. Economic justice desperately needs to play a role in preventing the unraveling of these communities.

Larry

From: Newman, Abby@SLC [<mailto:Abby.Newman@slc.ca.gov>]
Sent: Tuesday, October 09, 2018 6:13 PM
To: Schwartz, Noaki@Coastal
Subject: Re: Abby Newman's EJ SLC Statement
Attached: CCC EJ Presentation AN.docx

In case you need the final statement for the record, please find attached the most recent version with a few small edits.

Thanks for your continued patience.

-Abby

Good morning Commissioners,

My name is Abby Newman and I'm here today on behalf of the California State Lands Commission as their Sea Grant Fellow.

While the Coastal Commission and the State Lands Commission have different jurisdictions and responsibilities, our work on behalf of the people of California is very much related. Our agencies are committed to ensuring public access to California's coastline and protecting the state's ocean, coastal, and Public Trust resources.

Both Commissions have embarked on developing an environmental justice policy. And while the process and timelines of our respective policies may differ, the goals are the same: to ensure that priority concerns facing marginalized and disadvantaged communities are factored into our decision-making process, and that our public land management work adequately considers environmental justice concepts and values. Another key goal, which is also reflected in the Coastal Commission's draft policy, is that the process and outcomes of development are more equitable.

Our Commission has partnered with the Coastal Commission staff to convene meaningful community outreach. These outreach sessions are critical to informing our respective policies, gaining trust, and nurturing partnerships in local communities. Our agencies are also working together as part of the 2018 Government Alliance on Race and Equity cohort in Sacramento, where we are learning how to advance racial equity in government—a key aspect of environmental justice.

The Coastal Commission's draft EJ policy identifies priority concerns for marginalized and disadvantaged communities that are also reflected in the State Lands Commission's draft policy. These include: meaningful community outreach and public engagement, more accessible meetings, honoring tribal concerns, public access, accountability, and climate resiliency—just to name a few.

Healthy communities and a clean environment depend on the State achieving environmental justice. On behalf of the State Lands Commission staff, I commend the Coastal Commission on its work to develop a robust Environmental Justice Policy, and on the significant and extensive community outreach that is the basis of the draft policy. We look forward to continuing working with the Coastal Commission to finalize and implement our respective Environmental Justice Policies.

Thank you.

From: Rosemary Nelson [mailto:rosemarynelson@me.com]
Sent: Thursday, October 18, 2018 8:27 AM
To: Selvaraj, Sumi@Coastal
Subject: Coastal Commission Draft Environmental Justice Policy

Dear Sumi Selvaraj, CFM

As residents of an area affected by air pollution from the Oceano Dunes State Vehicular Recreation Area my husband and I have struggled for years to have our voices heard. The dangerously high levels of PM2.5 and PM 10 air pollution caused by OHV riding cause serious health problems. The only protection residents have is to remain indoors. Unfortunately, those who work in the area such as farm workers and laborers have no choice. And ultimately they have no voice. They are an example of the many people whose quality of life is diminished by the activity of recreation on the Coast of California.

Environmental Justice laws can offer protection, however, there needs to be language to specifically address the problems of pollution. The current Draft does not adequately address the issue. We would suggest contact with the APCD to provide information and guidelines on air quality standards to be included under Habitat and Public Health.

We can also suggest the Website mesaairfacts.net for information on the Air Quality issue on the Nipomo Mesa.

Please let us know if we can provide additional information.

Sincerely,

Rosemary Nelson and Michael Young

Sent from my iPad

From: rachel toti [mailto:rachelletoti@gmail.com]
Sent: Monday, October 29, 2018 11:54 AM
To: EnvironmentalJustice@Coastal
Subject: Comments on Draft Environmental Justice Policy
Attached: 2018 YELP Comments

I would like to provide the following comments on the draft policy. I live in south San Luis Obispo County in an area known as the Nipomo Mesa. I feel there are several areas in the policy which should be made stronger and more specific.

1. Public health and habitat protection should be elevated to the top priorities. Without habitat protection, there will be no viable coast to access. Without healthy air and water, the public health will decline and people will not want to visit the coast. I live near a particular stretch of beach known as the Oceano Dunes. About 5 miles of this beach is open to vehicles. Despite numerous complaints the Coastal Commission has failed to address the problems uncontrolled vehicle impacts are causing. Impacts include denuding of the vegetation, bird deaths, creation of a dust cloud that impacts residents of Oceano and the Nipomo Mesa.
2. Tribal Concerns are not being addressed. I have seen speakers from the Northern Chumash tribe speak many times at the Coastal Commission meetings asking for protection of their sites in the Oceano Dunes. Except for fencing a few sites, a comprehensive plan is not in place. The tribal leaders should be listened to and their sites when located should be protected from vehicle and human traffic. This is long overdue.
3. Where's Oceano's beach?? The little unincorporated town of Oceano is one of the neglected areas of SLO county. Its population is generally less affluent than surrounding areas and its residents are about 60% hispanic. Main streets through Oceano are used to access the OHV park entrance at Pier Avenue. Despite being a beach front community, Oceano has a rundown and seedy appearance. OHV rental places and liquor stores abound. The citizens of Oceano want beach access without the nuisance of non-stop traffic. Picture the 405 freeway on the beach. The Coastal Commission is well aware of this problem and for over 30 years has not resolved it.
4. Coastal Access. On one hand there is too much access for vehicles and overcrowding of camping areas. The camping fee is \$10 per night which would be good for lower income groups, but it seems to be taken by many individuals with huge RV's and expensive ohv toys. These folks rope off the beach and block access for others with "caution tape". About 50% of the park users are NOT people riding ohv's, they are the general public who would like a pleasant beach camping experience. I am attaching YELP comments from such a family and their experience in Oceano Dunes.

Coastal Access could be provided at several areas adjacent to the dunes, where parking and camping sites and walking trails could be added, but haven't been. Oceano has a redevelopment plan with a proposed "bike to the beach" concept that has not been implemented. Access and camping needs to be developed so that the general public is separate from the ohv users. OHV riding is allowed and occurs 365 days per year and 24 hours per day. Night riding, loud music, drunken parties are all a part of the experience you get in the ODSVRA. The Coastal

Commission knows this and seems to be ok with it. Which brings us to accountability and transparency.

5. Accountability and Transparency from the Coastal Commission are lacking in regards to our coastal resources for unknown reasons. Perhaps it is workload, perhaps it is avoidance of difficult problems or perhaps it is inter-agency tension between the Coastal Commission and the State Department of Parks OHV Division. A current example is the failure to hold annual reviews of the park management practices and when they are held, to do nothing of substance to address the long standing issues. The permit for this park requires annual reviews of its operations and management to control vehicle impacts to coastal resources. Despite being sent photos and videos of damage and failure to follow the permit provisions, the Commission has done nothing to enforce the permit provisions. Had it done so at anytime between 1982 and now, the environmental damage and air quality impacts would not have occurred. Instead they looked the other way.

Another perfect example is the Habitat Conservation Plan for the park. At the 2015 annual review, the Commission declared that completion of the HCP was of utmost priority (it was overdue by 20 years) and should be completed as soon as possible. As of this writing, the draft HCP has not been released. In the meantime, Calif. Least Tern and Western Snowy Plover have been killed or "taken" without a U.S. Fish and Wildlife permit.

I could go on, but won't. I hope the environmental justice policy will help the Coastal Commission improve the coastal protection benefits for everyone.

Sincerely,
Rachelle Toti

2018 YELP Comments

7/5/2018

- 1 check-in

The Oceano Dunes Campground, where do I begin? We stayed July 3rd-July 5th per hubby's request. I like actual campgrounds more than sand. I haven't stayed here at the dunes, so I checked reviews to see what to expect. I tried to have a positive outlook prior to experiencing a night here. But, after the trip had concluded we all agreed to never stay here again.

If you have an RV, ATVs, and love to party...sure.
But, we are devoted Christians folks who do not partake in the partying.

If you want a relaxing beach camping trip, go elsewhere!
The first night of the 3rd, ATVs were our passed 11pm blasting rap music with their lights on. There were a few idiots shooting off illegal fireworks. One had almost exploded near our campsite (we had my two year old daughter with us outside) I was very angry! I said "oh no, not with my baby out here!" They seen us with a toddler all day, who the heck does this?? They stop, and finally we hit the hay.

Well, the ATVs people are still out riding, no regulations or rangers that came out to check out fireworks or to keep people quiet. No quiet hours??? Madness.

While in bed, jacks decided to light more illegal fireworks and me almost being in sleep mode, feel my heart pop out of my chest from the surprise attack. Very upsetting... but, we prayed that they would go to sleep and finally we were able to sleep.

The next day was not as terrible, you could see fireworks and people were shooting more illegal fireworks all over the dunes, but they can't keep up with them.

The fireworks from Pismo were in the far distance, very tiny. Another negative was the groups that don't pick up their trash when they leave. They have dumpsters to drop it off that makes it convenient and lazy folks can't wipe their own bottom. It makes me sick!!! Pick up after yourself, people!

Thanks Oceano, but we will not be back. I will stick to the beautiful forest and hidden ocean gems!

ATV riding for the day, but no sleeping at this joint again!

7/27/2018

OUT OF CONTROL! Zero stars, if we could. Forget sleep. Forget decency. Forget common courtesy. Forget everything you think beach camping might be. It's after 3 a.m. and you would think it's noon. Loud music. Screaming drunks. Roaring vehicles pulled up and stopped right next to our tent with bright lights blazing. No rangers or any sort of control. All this after driving forever to find a spot not claimed by regulars (who rope off an acre claiming they have lots of campers coming in later, a huge exaggeration) .If this sounds like paradise, this is your camping area! This is NOT the California depicted in TV commercials! We will not be back and hate rude people ruined this otherwise beautiful area. Shame on California for allowing this to be representative of their state. Pitiful would sum it up in one word.

From: Arlene Versaw [mailto:arleneversaw@gmail.com]
Sent: Tuesday, October 30, 2018 8:42 AM
To: EnvironmentalJustice@Coastal
Subject: Comment on draft environmental justice policy

Good day,

I believe I have already submitted comment on the draft environmental justice policy, but I have given it further thought and would like to add this point:

This policy would be a great enhancement to the mission of the California Coastal Commission. Those who are disadvantaged cannot defend themselves. It is a responsibility of elected and appointed officials, who have the power to protect, to do so. Any attempt through the Oceano Dunes OHV State Parks Public Works Plan to shift any negative public impact of its operations south should be disallowed if it simply moves the problem into areas such as Guadalupe.

Instead of impacting the public, the air pollution generated from the OHV park should be curtailed at the source. Moving it into areas where the public is less able to defend itself is totally unacceptable.

Thank you,

Arlene Versaw
Nipomo Mesa

From: Katherine Biala [mailto:kybiala@icloud.com]

Sent: Wednesday, October 31, 2018 8:04 PM

To: ExecutiveStaff@Coastal

Subject: Public Comment on November 2018 Agenda Item Wednesday 7f - Environmental Justice Draft Policy

Citizens for Just Water is comprised of groups and individuals who receive potable water from the Marina Coast Water District (MCWD) and CalAm and who share a common interest in preserving and protecting a long-term water supply with equity among competing interests. Just Water promotes the fair and equitable use and development of sustainable groundwater without adverse consequences to the needs and rights of any party. Its mission is to educate the community on water issues and to advocate for regional water justice.

As a citizen group, Just Water received formal status as a Party to the Proceeding in the CA Public Utilities Commission processes December, 2015 related to the Monterey Peninsula Water Supply Project (MPWSP). This is highly unusual for members of a disadvantaged community who have neither money, legal representation or experience in formal government proceedings. We have learned along the way.

We are very interested in the Environmental Justice policy and have, as a group, been appreciative of the CA Coastal Commission's significant outreach to disadvantaged communities such as Marina and Seaside. We would like to share some assessment tools for the EJ policy that have incorporated the ways in which disadvantaged communities have been marginalized, discounted, or ignored. It is our hope that you will seriously consider this input that has come from our personal experiences in advocating for our water rights, the preservation of our shoreline habitats and the economic welfare of our communities in the face of enormous challenges.

Representatives of Citizens for Just Water will be speaking to the EJ policy at the meeting, as well. Thank you for this opportunity to address you in written and oral communications.

Cordially,
Kathy Biala
Resident of Marina, CA
Citizens for Just Water

I. Topic: Designation of “Disadvantaged Community”			
Objective: To establish the status of a community as a Disadvantaged Community			
<ul style="list-style-type: none"> • Establish criteria for designation of a disadvantaged community and/or identify accepted source for rating of disadvantaged communities e.g. CalEnviro Screen; US Census demographics on race, ethnicity, low income; home affordability due to gentrification; disproportionate number of regional burdens e.g. toxic waste projects within a jurisdiction, disparity of jurisdictional wealth, etc. • Make decision on the application of CCC environmental justice policy to an identified community. • Apply EJ policy to a designated disadvantaged community. • Ensure that disadvantaged communities within a corporate umbrella are not considered to represent the corporation as a whole, or that financial arrangements to help another disadvantaged community at the expense of another disadvantaged community does not prejudice the commissioners in favor of the corporation. 			
Measures	Yes	No	Notes
1. Has the community met the criteria for status of a “disadvantaged community”?			
2. If yes, to above, does the agency Environmental Justice policy apply to this disadvantaged community for the project proposed?			
3. If more than one community involved with the project, has each met the designation criteria?			
4. Will only the designated disadvantaged communities that have been directly negatively impacted (environmentally or financially) by the project be considered under the agency Environmental Justice policy i.e. those disadvantaged communities receiving benefits but suffer no risks and harm are not considered)?			If no, explain.
<i>Describe additional actions, mitigation recommended to meet this objective (attach additional pages as needed):</i>			

II. Topic: Verification of Applicable Current Legal Rights			
Objective: To ensure that applicable laws are in compliance for disadvantaged communities			
<ul style="list-style-type: none"> Specify the essential legal rights required under law for any affected parties related to the project. Receive documentation of legal verification of compliance to relevant local, state and federal laws in question, on behalf of disadvantaged communities. Future acquisition of obtaining necessary current rights is not acceptable. Consideration of any permitting under the CCC will not proceed until verification of current legal rights status is verified through documents by the legal grantor of such rights. 			
Measures	Yes	No	Notes
1. Have essential legal rights been identified for this project?			
2. Have document verifications from legal grantor of such essential current rights been submitted to the CCC?			
3. If no to the above, has the CCC communicated to project proponents that until such documents are received, permitting process will not proceed?			If no, explain.
4. If statements project proponents state that future rights can be obtained for the project, has the CCC communicated that only current rights will be accepted before the project is reviewed for permits?			If no, explain.
<i>Describe additional actions recommended to meet this objective (attach additional pages as needed)</i>			

III. Topic: Application of Community Values

Objective: Equitable assessment and weight applied to community values of disadvantaged communities

- Relevant community values are identified by the disadvantaged community that apply to the project e.g. protection of natural resources including right to clean, affordable water, protection of sensitive habitats, right to economic prosperity related to enjoyment of beaches, beach access and affordable recreation.
- Assess distribution of benefits, risks and harm between applicant and its allies, and the disadvantaged communities.
- Document historical distribution of undesirable industrial plant sitings to determine previous unfair burdens to disadvantaged communities impacted by the current project.
- Consider cumulative impacts of risks and harm and viable alternatives to the project that will not subject the disadvantaged community to unfair future burdens.
- Before accepting any completed EIR, CEQA or other evaluations, conduct independent verification that disadvantaged community concerns and needs were equally addressed in such documents as compared to project proponent needs.

Measures	Yes	No	Notes
1. Has the disadvantaged community engaged with the EJ staff to communicate community values that are or will be violated by the project?			If no, explain
2. Has there been a disproportionate impact in relation to benefits, risks and harm to the disadvantaged community?			If Yes, specify
3. Has there been unfair share of industrial facilities already sited within the disadvantaged community jurisdictions?			If yes, specify
4. Are there viable alternatives to the project that will benefit the disadvantaged community and/or avoid risks and harm?			If yes, identify
5. Has there been disregard of disadvantaged communities' community value needs in previous EIR, CEQA and other approval hearings for this project?			If yes, explain

Describe additional actions/mitigation recommended to meet this objective (attach additional pages as needed):

IV. Topic: Economic Disadvantages of Disadvantaged Communities			
Objective: To acknowledge and make transparent the influence, power advantages of corporations and its allies over disadvantaged communities			
<ul style="list-style-type: none"> Assess and report the ways in which a corporation or its allies may have economic and resource advantages related to the promotion of its project. Request disadvantaged communities to provide any documents that demonstrate ways their financial disadvantage has been evidenced in challenging the project, e.g. in marketing initiatives to the public compared to corporate spending, business agreements that offer financial benefits or forgiving of debt for support of project, ability to pursue and/or sustain lengthy lawsuits, cost of hiring experts/consultants/attorneys in the process of challenging the project versus those of the project proponents etc. Verify any recent corporate donations given to civic/non-profit organizations in the affected areas or surrounding jurisdictions that may be influenced to support or not oppose the project. Research direct and indirect political payments to persons/groups that are involved in or can influence the project's approval or decision-making processes. 			
Measures	Yes	No	Notes
1. Has the CCC staff sought out input directly from the disadvantaged community of the ways in which they have or are experiencing disadvantages from proponents of the project?			If no, explain
2. Has there been research into direct or indirect financial contributions of project proponents that would advantage their position?			If no, explain
3. Has the EJ team incorporated such information in the environmental project report to make transparent the disadvantages experienced?			If no, explain
<i>Describe additional actions recommended to meet this objective (attach additional pages as needed)</i>			

V. Topic: Application of Best Practices Science			
Objective: The CCC will choose the best practice scientific data to be used in its decision-making process and omit findings of other studies that do not utilize such methodologies			
<ul style="list-style-type: none"> • Apply rigorous, best practice, and state-of-the-art science whenever such methodologies are available. • If disagreement about conflicting methodologies, a third party, neutral, academic body will be utilized to determine which conflicting scientific methodology presents the more credible, relevant, best practices science for CCC decision making. • The disadvantaged community’s science must be given full consideration to offset any financial, political, and resource advantages of project proponents that may have resulted in previous valid studies not being considered or successfully blocked. • If the disadvantaged community requests scientific inquiry regarding key concerns, scientific evaluation should be pursued independently by the CCC, if the disadvantaged community does not have the funding and/or expertise to verify the concerns themselves. 			
Measures	Yes	No	Notes
1. Are best science methodologies been allowed in the CCC decision making regarding approvals of the project?			If no, specify
2. If there two conflicting scientific methodologies being presented, has an objective determination been made to evaluate the best practices, state-of-the-art and available science for application in decision making?			If no, specify
3. If any FEIR, CEQA, or other documents submitted to CCC have not considered the best science practices, have these findings been disregarded by CCC in their current decision making?			If no, explain
3. Is there scientific inquiry requested by the disadvantaged community that the CCC is able to accomplish on behalf of the disadvantaged community?			If yes, specify
<i>Describe additional actions recommended to meet this objective (attach additional pages as needed)</i>			

VI. Topic: Public Participation and Access to Decision Makers			
Objective: To ensure that disadvantaged communities have equal opportunity for receiving information and giving comments about the project, as well as having access to decision makers, equivalent to the project applicant			
<ul style="list-style-type: none"> • Determine the number, kind and location of informational outreach to disadvantaged communities to educate the public about the project impacts vs. those held for wealthier, more politically connected communities supporting a project. • Assess the extent to which in-person access to CCC staff and commissioners has occurred between disadvantaged community representatives vs. project proponents related to the project. • Conduct in-person or other opportunities for disadvantaged community advocates and public entities to regularly dialogue with staff and the assigned EJ commissioner on the environmental justice project impacts. • Create transparent reporting of all ex parte communications and sanctioned meetings with corporate entities and their allies, as compared to those of disadvantaged community representatives. 			
Measures	Yes	No	Notes
1. Has there been disproportionate outreach efforts by the project proponents to educate and engage the public in the disadvantaged community regarding impacts of the project vs. outreach to wealthier, politically connected communities?			If yes, specify
2. Has regular accounting been reported of the number/kind of project proponents' contacts and ex parte communications comparing contacts with disadvantaged community citizens and their representatives vs. project proponents?			If no, explain.
3. Have there been efforts to provide substantive opportunities for disadvantaged communities to engage with CCC staff related specifically to the project, beyond the 2-3 minute public comment at hearings?			If no, explain
4. Determine when CCC decisions are being made prior to full discussion with and input by disadvantaged communities and public agency's directly impacted.			
<i>Describe additional actions recommended to meet this objective (attach additional pages as needed)</i>			

VII. Topic: Conflict of Interest Issues			
Objective: To evaluate any conflict of interest issues that contribute to disadvantaged communities' ability to be fairly represented in decisions.			
<ul style="list-style-type: none"> • Discuss with the disadvantaged community whether conflict of interest issues exist that have or will substantively impact the proposed project. • Evaluate these claims not by anecdotal justifications by the parties associated with or benefit from the conflict of interest, but by pre-determining inquiry questions and requesting objective information to substantiate any claims. • Identify and report findings to the commission. • Recommend how to omit or minimize previously considered approval actions/findings that may have been influenced by heretofore unconsidered conflicts of interest. 			
Measures	Yes	No	Notes
1. Was the disadvantaged community asked directly if there are any concerns with past or current conflict of interest issues related to the project?			If no, explain
2. If concerns regarding potential conflict of interest are raised by the disadvantaged community, did CCC develop list of inquiry questions to determine the validity of claims?			If no, explain
3. Did CCC inquire into these conflict of interest questions to affected parties and is there a valid potential conflict of interest?			If no, explain
4. If a potential conflict of interest exists, has there been a recommendation as to how to manage the impact of these findings in the CCC project approval processes?			If no, explain
<i>Describe additional actions recommended to meet this objective (attach additional pages as needed)</i>			

From: Linda Reynolds [mailto:lreynolds151@gmail.com]
Sent: Wednesday, October 31, 2018 2:59 PM
To: Selvaraj, Sumi@Coastal
Subject: The Environmental Justice issue regarding the Oceano Dunes

Good afternoon Sumi,

Attached are my comments on this serious issue. I am glad the Coastal Commission is seriously looking at this plight for those visiting the Oceano Dunes and the residents of the area.

Thank you,
Linda Reynolds
Nipomo Mesa Resident

Comments on the Coastal Commission's Draft Environmental Justice Policy

In reviewing the audio and the written documentation regarding the environmental justice issue I would like to make a few brief comments on this serious issue.

The information on the Coastal Commission site and audio portion discusses the need for lower cost coastal activities. Currently, most of the area being used by the OHV community is not a viable recreation for people coming to escape the heat and want to recreate at an affordable cost. There needs to be more camping sites and safe hiking areas for people who want to enjoy the Dunes. The expensive OHV hobby is only for those who can afford the trucks and other equipment.

The other issue is the poor air quality that is affecting the residents who live and work on the Nipomo Mesa and the Guadalupe area.

This is a serious environmental justice issue. People working in the farm community, working in the landscape business, other businesses that involve outside work such as construction, children on the playgrounds and residents living on the Mesa face the particulate matter issue that is caused by the OHV riding on the dunes on a year round basis.

Those of us involved with the the air issue have spent countless hours at Coastal Commission meetings, APCD meetings and Board of Supervisor meetings stressing the importance of clean air for the citizens living downwind from the Oceano OHV park. I personally have been thanked by people I know who are working in the community for what we are trying to do to address this issue. Most people do not have the ability to leave work and present their case on this serious health issue for their young families. The environmental justice policy needs to represent those who are negatively impacted by the particulate matter coming from the Oceano OHV park.

From: Dionne Ybarra [mailto:dionne@thewahineproject.org]

Sent: Monday, November 05, 2018 1:06 PM

To: Martinez, Erik@Coastal

Cc: EnvironmentalJustice@Coastal

Subject: Re: Coastal Commission's Draft Environmental Justice Policy and 11/7/18 Pubic Presentation in San Francisco

Hello, I can't thank you enough for the commitment that has been made on my behalf of disenfranchised communities in California to ensure their equitable access to the coast. I apologize that I haven't been able to be more involved in giving you feedback from the perspective of our non profit. I am running for elected office so I have been strapped for time with work pursuing this other huge endeavor.

I just wanted to take a minute to let you know that I look through the policy draft and I don't have anything to add or change. This Wednesday I will not be able to attend the next meeting because I will be on my way to Santa Fe for a work retreat with The Nature Conservancy.

Let me know if there is anything else I can do to be of assistance in the process.

Many thanks for all of your time and consideration on this.

~Dionne

From: Lucas Zucker [mailto:lucas@causenow.org]

Sent: Tuesday, November 06, 2018 10:58 AM

To: EnvironmentalJustice@Coastal; Selvaraj, Sumi@Coastal; Schwartz, Noaki@Coastal; Christie, Sarah@Coastal; Maricela Morales; Diana Vazquez

Subject: CAUSE Comments on Coastal Commission Draft EJ Policy

Dear Coastal Commission Staff,

Attached are CAUSE's comments on the current draft of the Commission's Environmental Justice Policy. Thank you for the opportunity to provide comment.

Also attached is the State Lands Commission draft EJ policy, which is referenced in our comments.

Thank you,

Lucas Zucker
Policy and Communications Director
Central Coast Alliance United for a Sustainable Economy (CAUSE)
2021 Sperry Ave. #9
Ventura, CA 93003
(805) 658-0810 ext. 204



Central Coast Alliance United for a Sustainable Economy

CAUSE

regional power in action

November 6, 2018

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Alex Garcia
Community Organizer

Dear Coastal Commission Staff,

Thank you for the opportunity to submit comments on the California Coastal Commission's draft Environmental Justice Policy. The Central Coast Alliance United for a Sustainable Economy (CAUSE) is a social, economic, and environmental justice organization working in the Central Coast region of California, which has worked for many years at the nexus of coastal issues and environmental justice. While we appreciate your efforts and attention towards this issue, we believe this draft policy needs significant improvement and suggest a longer timeline for community engagement, policy development, approval and implementation. The proposed policy needs substantial strengthening in addressing specific environmental justice issues, detailing a process for considering decisions related to environmental justice before the commission, and laying out a pathway to implementation. Aside from the introductory memo and attached appendix, the policy itself is only three pages long. The scarcity of detail and substance is particularly disappointing in comparison to the current draft State Lands Commission Environmental Justice Policy (see attached), which contains approximately ten times as much content after in-depth engagement with an advisory committee of California environmental justice organizations who met regularly with each other and a team of SLC staff over the course of eight months and gave several rounds of feedback which were used to adjust and update multiple drafts of the EJ policy.

Often, it seems as though the proposed policy simply points to existing Coastal Commission practice and declares that it is equitable, rather than considering new steps towards environmental justice. This is exemplified in the first line of the policy, stating "*The California Coastal Commission's commitment to diversity and environmental justice recognizes that the Coastal Act is an inherently equitable law, designed to protect California's coast and ocean commons for the benefit of all the people.*"

For example, **under the Coastal Access section**, no new policies or goals to promote environmental justice are referenced. The most specific goal articulated is "*the Commission will continue to strive for a no-net-loss of lower cost facilities in the coastal zone*". Coastal access is not only about the availability of low-cost visitor facilities. While this is an important existing practice of the Coastal Commission, it does not address the sweeping gentrification that has been experienced by communities within the Coastal Zone, pushing low-income communities and communities of color farther and farther inland away from the coast. It does not speak to the rapid growth of the logistics industry via global trade and online retail that

threatens coastal access through the expansion of ports in environmental justice communities. It makes no mention of efforts to remove fossil fuel and other toxic infrastructure from the coast in communities like Oxnard, Richmond, and Wilmington, which limit coastal access by creating unwelcome, polluted, and privatized coastlines. In neither this section nor the Climate Change section, is any reference made to how some climate adaptation measures like seawalls to protect expensive beachfront property actually reduce coastal access for the inland public.

In the Habitat and Public Health section, the draft policy takes a similar approach. It states “*the Commission will continue to prioritize the protection of coastal resources including sensitive habitats, watersheds, water quality, marine biodiversity, and biological productivity*”. Coastal access and public health are perhaps the most important areas of coastal policy for environmental justice communities, yet the proposed EJ policy contains no new objectives in either of these areas other than the continuation of existing practice. Public health in coastal communities involves more than water quality and species conservation. When ports, power plants, and oil refineries in coastal environmental justice communities propose to expand or redevelop, polluting the air of nearby communities, or companies leave behind old industrial facilities and toxic waste, contaminating the soil for neighboring residents, this threatens public health. It also violates the spirit of the Coastal Act by deteriorating the quality of coastal access for residents of these environmental justice communities, and removing many of its benefits, such as healthy outdoor recreation and connection with nature.

In this policy, it is important to understand that equal access is not equitable access. While the existence of a beach that all can theoretically travel to is equal access, proactively ensuring affordable housing and transportation nearby is a step towards equity. Many of the Coastal Act conflicts with private landowners who attempt to close off public access to nearby beaches are fought over beaches where low-income people or people of color virtually never visit, because they are in remote isolated areas or surrounded by wealthy exclusive communities. Meanwhile, coastlines near communities of color have often been dedicated to heavy industrial uses that have essentially eliminated the public coast in these areas, yet too little is being done to remedy or mitigate this.

While staff may see some environmental justice issues as not clearly in the Coastal Commission’s jurisdiction, the Commission has significant power to influence the direction of coastal development through its permitting authorities that can be used to encourage a more equitable California coast.

For example, expanding the Coastal Commission’s goal of no net loss of *low-cost visitor facilities* to also encompass a goal of no net loss of *low-cost housing* in the coastal zone would be a strong policy vision. The ability to directly achieve this vision is unfortunately limited by the state’s removal of the Coastal Commission’s authority to require inclusionary housing units in new coastal developments. **However, the Commission could still use its review of permits as an opportunity to encourage Community Benefits Agreements in new coastal developments affecting environmental justice communities.** Cities often pursue redevelopment of their waterfronts, using a combination of private investment and public subsidy, with significant review and dialogue between developers, community groups, environmental advocates, labor unions, and local and state agencies. These are opportunities through proactive stakeholder engagement to encourage Community Benefits Agreements that meet the needs of environmental justice communities, including enhanced coastal public recreation access, improved environmental quality, inclusion of affordable housing units, and creation of quality middle-wage jobs. The Coastal Commission, in its Environmental Justice Policy, should declare an intent to

seek these types of community benefits during the review process of major coastal developments, even if it does not have ultimate power to reject or approve them on these grounds.

Similarly, while the Commission may have more direct statutory authority on water quality than it does on air quality, toxics exposure, or other environmental justice issues, it does have influence on projects impacting public health beyond water contamination. When the Coastal Commission has an opportunity to approve or deny a polluting project, it should take into account the level of pollution impacts existing in the surrounding area and consider the cumulative impacts of such a decision. The Coastal Commission can also consider factors such as the practical impact of industrial development in reducing public coastal recreation nearby. While a power plant on a beach may not literally prevent nearby environmental justice communities from physically walking on to the beach, it has a significant impact in the frequency and quality of beach use among that community. The Coastal Commission should also consider the public health risks of coastal toxic sites, particularly in light of climate change, and how storm surge flooding can spread contamination to nearby residents, visitors, or workers.

The policy could also benefit from greater specificity and substance in regards to how regular decision-making processes at the Coastal Commission will change as a result of this policy. Will new coastal development projects undergoing environmental impact assessment face any greater threshold for approval based on whether they exacerbate the inequalities of coastal access or environmental quality within a nearby environmental justice community? Will localities submitting their Local Coastal Plans be encouraged or required to include an environmental justice element, much as municipalities are now required to do for their General Plans to comply with SB 1000? Will the Coastal Commission conduct any review of its current programs and decisions to determine if there has been a disproportionate lack of access among some communities in the distribution of programmatic funding, or a disproportionate impact to certain communities in the permitting of polluting projects?

While the State Lands Commission also has limited ability to immediately cure the ills of generations of environmental injustice, their Environmental Justice Policy lays out clear examples of what is in their authority and how it can be used to advance environmental justice goals. In part, this detailed specificity is due to the two different sections of the State Lands Commission's policy. The first section is the policy itself, which lays out several dozen objectives. The second part is the Implementation Guideline, which details strategies the commission will take to achieve these goals in its day to day work.

For example, while **the Accountability and Transparency section** of the Coastal Commission's Environmental Justice Policy takes important steps in this direction including analysis of impacts to EJ communities and consideration of permit conditions to avoid or mitigate these impacts, a more detailed implementation plan would greatly improve the policy. For a model, see Implementation Goals 4-6 in pages 9-11 of the current State Lands Commission Environmental Justice Policy draft. **We strongly encourage the Coastal Commission to include a similar Implementation Guideline section in its EJ Policy, with steps and timelines for implementation.**

At times, the draft EJ policy takes great pains to avoid overpromising major changes in Coastal Commission practice. For example, **in the Meaningful Engagement section**, the text states, "To reach the goal of full engagement, Commission staff should make every effort to reach out early and often to these communities, and

in language that is understandable and accessible, as staffing and resources allow.” If basic outreach and accessible language require significant staff time, the Commission should proactively dedicate staff and resources in its budget so that these engagement practices are consistent and guaranteed, not provided if possible after other staff priorities. Furthermore, while staff’s perspective is that some issues should be included in later documents like the commission’s Strategic Plan, there is no reason why significant environmental justice issues should not be included in the general vision of the Environmental Justice Policy, even if they will be examined in more detail through later processes such as the Strategic Plan.

While we appreciate the staff’s work thus far and progress on creating the Commission’s first Environmental Justice Policy, we are troubled by the lack of detail and substance in how this policy will be implemented, as well as the hesitation to set forward a new vision for advancing environmental justice beyond existing practice. Given the short timeline to incorporate feedback after the public comment deadline, with mere weeks before commissioners are expected to make final approval of the policy in December, CAUSE encourages the staff to extend this timeline as long as necessary to develop a more comprehensive and thorough Environmental Justice Policy based on input received from environmental justice communities.

Sincerely,

A handwritten signature in black ink that reads "Maricela Morales". The signature is written in a cursive, flowing style.

Maricela Morales
Executive Director
Central Coast Alliance United for a Sustainable Economy (CAUSE)

California State Lands Commission
SECOND DISCUSSION Draft Environmental Justice Policy

I. Introduction

The Commission envisions a future in which all Californians have access to and enjoy the benefits of public lands and natural resources, regardless of socioeconomic status, race, religion, culture, national origin, gender, gender identity, gender expression, or sexual orientation. It also envisions a future where environmental justice communities are no longer disproportionately impacted by pollution and environmental hazards. The Commission's primary responsibility to apply the Public Trust Doctrine¹ to California lands is rooted in the principle that the public has a right to use and enjoy rivers, lakes, and the ocean for commercial and recreational navigation, fishing, swimming and other recreation. The Commission is entrusted to protect, preserve, and manage the lands and natural resources under its jurisdiction in the best interests of all Californians. The Commission commits to promoting social equity and advancing environmental justice² through more inclusive decision-making that considers the needs and concerns of all communities, but with sensitivity to disproportionate burdens on marginalized, disadvantaged, and tribal communities.

For thousands of years, Tribes and tribal communities have inhabited the lands we know as "California." The Commission recognizes the critical connection California's tribal communities have to the environment and acknowledges that the environmental injustices they have endured over generations, including the destruction of natural resources that sustained their communities and systematic displacement from their lands, give Native communities a unique perspective on environmental justice concerns. Today, California's Tribes and tribal communities experience many of the same environmental injustices as other vulnerable communities, such as impacts from pollution to air, water, soil, and other resources. Impacts experienced by indigenous communities from the loss of access to sacred resources or locations and lost opportunities to gather or grow food, to hunt and fish, or to practice traditional medicine are uniquely experienced by indigenous communities. Incorporating tribally-identified metrics and narratives, where applicable, is a critical part of an environmental justice impact analysis. Together with its Tribal Consultation Policy,³ the Commission will use this policy to amplify tribal voices in fulfilling its mission and vision.⁴

¹ <http://www.slc.ca.gov/PublicTrust/PublicAccess.html>

² California law defines environmental justice as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies. See Government Code section 65040.12.

³ <http://www.slc.ca.gov/About/Docs/Tribal.pdf>

⁴ <http://www.slc.ca.gov/About/Overview.html>

Environmental justice issues and concerns intersect with much of the Commission's work. Examples include surface leasing for industrial and commercial uses, regulatory oversight of marine oil terminals, access to public lands and resources, renewable energy siting and development, preventing aquatic invasive species introduction, climate change resiliency, sea-level rise preparedness and adaptation, the oversight of granted Public Trust lands including those underlying most major ports, and waterfront redevelopment. The Commission commits to the principle that the environmental injustices of the past will not define California's future, and supports the ideal that all communities equitably share in the environmental benefits and burdens resulting from its decisions. Through training about environmental justice and social equity, increased awareness, communication, and early and frequent engagement with marginalized and disadvantaged communities, the staff analysis and recommendations will be more inclusive, transparent, and equitable.

II. Environmental Justice Vision and Objectives

1. PROMOTE EQUITY

- a. Promote the fair treatment of people of all races, cultures, national origins, genders, gender identities, gender expressions, religions, sexual orientation, and socioeconomic status concerning the development, adoption, implementation, and enforcement of laws, regulations, and policies within the Commission's jurisdiction.

2. INFORM THE PUBLIC AND TRIBES

The Commission will develop tools and strategies to better inform the public and tribal communities about:

- a. The Public Trust Doctrine - its history and why it is relevant to advancing environmental justice.
- b. The public's rights to access and enjoy Public Trust lands,⁵ including tide and submerged lands and navigable waterways; and
- c. The Commission's role:
 - i. As a trustee landowner of ungranted Public Trust lands and resources.

⁵ In coastal areas, sovereign lands include both tidelands and submerged lands, from the shore out three nautical miles into the Pacific Ocean and lands that have been filled and are no longer underwater. Tidelands lie between mean high tide and mean low tide. The beds of navigable lakes and rivers are also sovereign lands subject to the Public Trust. <http://www.slc.ca.gov/PublicTrust/PublicAccess.html>

- ii. As it relates to the oversight of lands and resources that the Legislature granted to local jurisdictions.
- iii. Generating income for the California State Teachers' Retirement System through the management of school lands.
- iv. As a regulator in the prevention of oil spills and marine invasive species.

3. INCREASE AND ENCOURAGE EQUITABLE PUBLIC ACCESS.

Preserve, protect, and expand public access to Public Trust lands and resources by supporting, facilitating and encouraging projects that increase public access to these lands and resources for disadvantaged, marginalized, and vulnerable communities that have traditionally not been able to enjoy them.

- a. Embrace partnerships with state agencies, Tribes, local jurisdictions, and organizations for projects and other efforts which:
 - i. Protect, conserve and restore natural resources, cultural resources, and wildlife habitat.
 - ii. Increase and enhance trail and recreational amenity construction, habitat restoration, open space parks, and beach access.

4. INCREASE COMMISSION AWARENESS

- a. Be more informed about how and to what extent Commission decisions impact tribal communities and communities that are marginalized, disadvantaged, or vulnerable.
- b. Identify impacted and vulnerable communities that live, work, and recreate near a proposed project site.
- c. Engage in early and effective outreach and collaborate with affected communities and Tribes beginning at the application submittal and throughout the application/project review process.

5. ANALYZE IMPACTS/IDENTIFY BENEFITS

- a. Assess and analyze information gained from environmental justice research and outreach to evaluate how environmental justice communities might be impacted by a proposed Commission action. Where applicable, analyze climate justice and climate resiliency and adaptation for disadvantaged communities.
- b. Identify and analyze potential benefits that may accrue to disadvantaged communities from changes to project proposals and create greater equity in the distribution of environmental benefits and burdens resulting from the Commission's decisions.

6. HONOR THE IMPORTANCE OF TRIBES' ANCESTRAL HOMELANDS

- a. Acknowledge, uplift, and respect the voices of California Native American Tribes and tribal communities in managing lands and resources that include their ancestral homelands. Seek out and learn from indigenous peoples' unique historical, cultural, and ecological knowledge of California's lands and resources.
- b. Understand the importance of Ancestral Homelands:
 - i. Respect and apply principles and practices of government-to-government consultation between California Native American Tribes and the State.
 - ii. Support opportunities to advance traditional use and enjoyment of ancestral lands by tribal communities by facilitating and prioritizing access to and use of state-owned lands by tribes with historical connections to the land.
 - iii. Protect cultural resources and preserve sacred and culturally significant sites whenever possible.
 - iv. Actively support opportunities to empower Tribes to protect, restore, and manage their ancestral lands.

7. BUILD TRUST AND FORM RELATIONSHIPS

- a. Leverage partnerships with public agencies, non-governmental organizations, ports and Tribal governments to advance environmental justice and achieve better outcomes for impacted communities.
- b. Forge cooperative relationships with local communities, tribal communities, and environmental justice groups.
- c. Support and encourage efforts by trustee ports to minimize and reduce environmental and health impacts and maximize environmental and economic benefits to vulnerable communities from industrial activities within the port.

8. SUPPORT CLEANER INDUSTRY

The California Global Warming Solutions Act of 2006 (AB 32) limits greenhouse gas emissions, reduces fossil fuel dependency, and encourages clean energy. To help achieve these goals, the Commission is generally supportive of efforts to:

- a. Transition California away from fossil fuels through the timely and responsible decommissioning of oil and gas facilities.
- b. Promote the use of State lands and resources to facilitate the development and growth of renewable and clean energy production.
- c. Work with regulatory agencies, industry, and lessees to prioritize energy efficiency and clean energy, with the goal of achieving near zero emissions.

9. INCREASE PUBLIC PARTICIPATION

- a. Increase and expand outreach efforts to communities that are impacted by Commission actions.
- b. Increase transparency by ensuring that materials related to a proposed Commission action use plain language and are available, where appropriate, in the languages that are most prevalent in the impacted communities.

- c. Engage vulnerable and impacted communities throughout the decision-making process on projects that affect them.
- d. Hold outreach meetings, public hearings, and Commission meetings in locations that are accessible to communities impacted by the decisions the Commission may make at those meetings.
- e. Leverage technology to increase public access and opportunities for participation in the Commission's deliberative process.

10. REDUCE IMPACTS/INCREASE BENEFITS

- a. Strive to minimize additional burdens and increase benefits to marginalized and disadvantaged communities through careful consideration of the equitable distribution of benefits and burdens on vulnerable communities resulting from a proposed project or lease.
- b. Work to reduce and mitigate adverse impacts on vulnerable communities that are disproportionately impacted by reduced air and water quality, water pollution, climate change, sea-level rise, displacement, lost economic opportunities, and inadequate access to open space and Public Trust lands and resources.

11. ACCOUNTABILITY

- a. Finalize and approve an Environmental Justice Policy Implementation Plan based on the attached appendix.
- b. Incorporate Environmental Justice Policy Implementation into the Commission's Strategic Plan.
- c. Regularly assess progress and efficacy of the implantation of this policy and provide progress reports to the Commission at a duly noticed public meeting.

****Appendix*

Implementation Outline

I. PURPOSE STATEMENT

These strategies are meant to guide the Commission's policy implementation and can be adapted to ensure the intent of this policy is carried through to and meaningfully considered in all areas of the Commission's work.

II. PROCEDURAL GOALS

The Commission will:

Goal 1.0: IDENTIFY AND ENGAGE WITH IMPACTED COMMUNITIES.

The Commission will work to identify marginalized and disadvantaged communities, including tribal and non-tribal communities, that live, work, and recreate near a proposed project or lease site as an initial step in the application process.

Strategies to Achieve this Goal:

- 1.1. Reach out to environmental justice groups, impacted communities, and Tribes and tribal communities when the Commission becomes aware of project proposals or receives a lease application and collaborate with impacted groups throughout the review process.
- 1.2. Develop relationships with community-based organizations and seek their assistance in identifying marginalized and disadvantaged communities that live, work, and recreate near a proposed project.
- 1.3. Develop and sustain relationships with tribal communities, to ensure tribal-specific environmental justice concerns are understood and considered.
- 1.4. Use CalEnviroScreen and other resources that assess where there are marginalized or disadvantaged communities in relation to project and lease applications and policy decisions.
- 1.5. Continuously update and enhance contacts and relationships with local, regional, and statewide environmental justice advocates.

Goal 2.0: SOLICIT INDIGENOUS PERSPECTIVES.

The Commission acknowledges that Tribes and their members have unique environmental justice issues and valuable historical, cultural, and ecological knowledge of California lands and resources. The Commission will seek tribal perspectives and expertise in furtherance of the Commission's Tribal Consultation Policy.

Strategies to Accomplish this Goal:

- 2.1. Respect and apply principles and practices of government-to-government consultation between California Native American Tribes and the State.
- 2.2. Seek out and learn from indigenous peoples' unique historical, cultural, and ecological knowledge of California's lands and resources.

Goal 3.0: EDUCATE AND EMPOWER STAFF.

All staff will receive ongoing environmental justice training to understand what environmental justice is, how it intersects with the Commission's jurisdiction, why it matters, and how staff will incorporate it into their everyday work.

Strategies to Accomplish this Goal:

- 3.1 Provide staff with educational materials about environmental justice and social equity. Build an Environmental Justice library of relevant and informative materials. Provide comprehensive environmental justice and social equity training for all staff. Incorporate environmental justice training into new employee onboarding training. Provide all staff with continuous education training for environmental justice.
- 3.3 Employ an Environmental Justice Liaison who will be the first point of contact with vulnerable communities, which will allow for more immediate and personalized response to inquiries, and facilitate ongoing communication with staff. The Liaison will also coordinate with local governments and environmental justice groups and expand the Commission's network of contacts.
- 3.4 Partner and collaborate with agencies, Tribes and tribe-affiliated trusts, nonprofit organizations, and other entities that are knowledgeable about environmental justice issues to host outreach meetings and workshop solutions.

- 3.5 Develop environmental justice champions throughout the Commission. Integrate environmental justice considerations into all aspects of the Commission's work.
- 3.6. Encourage and teach staff to incorporate, environmental justice issue identification, research, and analysis into division and program practices and procedures.
- 3.7. Share and implement lessons about social and racial equity learned from the Commission's participation in the Government Alliance on Race and Equity Cohort.⁶
- 3.8. Continuously assess staff capacity and workload and leverage resources to ensure that staff can fulfill the goals of this policy.
- 3.9. Incorporate and prioritize implementation of the Commission's Environmental Justice Policy in its Strategic Plan.
- 3.10. Empower staff to challenge the norm; seek to challenge the established culture and self-reflect.

Goal 4.0: ANALYZE POTENTIAL ENVIRONMENTAL JUSTICE IMPACTS OF A PROPOSED PROJECT OR ACTION.

The Commission will ensure that staff analyze, consider, incorporate, and balance the priorities and concerns of marginalized and disadvantaged communities equitably with the priorities and concerns of other stakeholders; and identify and explain the factors that staff has analyzed, considered, and weighed in making its recommendation to the Commission.

Strategies to Accomplish this Goal:

- 4.1. Incorporate the identification, research, and analysis of environmental justice concerns, issues and potential impacts into the Commission's practices and procedures.
- 4.2. Require industrial and commercial lease applications to identify environmental justice communities in the area and potential impacts of the project on those communities.

⁶ <https://www.racialequityalliance.org/>

- 4.3. Include an environmental justice section in staff reports for projects that impact vulnerable communities.

Goal 5.0: REDUCE IMPACTS.

Foster a culture that focuses on reducing and avoiding impacts and scrutinizes the value of a proposed project based upon its potential impacts on tribal and environmental justice communities.

Strategies to Accomplish this Goal:

- 5.1. Modify the Commission's industrial and commercial lease application forms to require applicants to identify environmental justice communities in the area and to identify potential impacts and mitigation.
- 5.2. As part of the application process, research impacts and work with the applicant and impacted communities to develop strategies to decrease those impacts and increase benefits to impacted communities.
- 5.3. When there are concerns that a project will result in disproportionate burdens to vulnerable communities, weigh those against the merits of the project and, where feasible, require reduction or elimination of those burdens.

Goal 6.0: IDENTIFY AND PROMOTE ACTIONS THAT INCREASE EQUITY.

The Commission will work to leverage the Commission's ownership and management authority over Public Trust and school lands to facilitate and encourage projects that alleviate or remove barriers to racial and social equity, including community- or regional-scale renewable energy facilities, broadband internet infrastructure, and habitat protection, management, or restoration projects that improve resource health for tribal subsistence and access to natural spaces for all communities.

Strategies to Accomplish this Goal:

- 6.1. Where the Commission is a responsible agency or a noticed party on a proposed project, Commission staff will seek to identify projects that have environmental justice impacts and provide comments during CEQA.
- 6.2. Develop strategic partnerships with trustee ports, harbor districts, and other grantees and lessees to support efforts to minimize and reduce environmental and health impacts on vulnerable communities from port industrial activity.

- 6.3. The Commission will seek opportunities to work with stakeholders to preserve, protect, and expand public access to Public Trust lands and resources for everyone, with careful consideration given to increasing access opportunities to Public Trust lands and resources for marginalized, disadvantaged, and tribal communities that live or work nearby but have not traditionally been able to enjoy these areas.
- 6.4. Promote and support the environmentally responsible development of school lands.

Goal 7.0: IMPROVE PUBLIC ENGAGEMENT AND INCREASE TRANSPARENCY.

Strategies to Accomplish this Goal:

- 7.1. Develop and implement a meaningful public participation process. Connect with communities at the beginning of the lease application and project review process and continue engaging them throughout the process.
- 7.2. Plan outreach meetings, public hearings, and Commission meeting times and locations in areas that are accessible to communities impacted by the decisions that the Commission may make at those meetings.
 - 7.2.1. When that is not feasible, find alternate ways of hearing from affected communities, such as satellite meeting locations and listening sessions, webinars, or community visits during the application review process before a Commission meeting.
- 7.3. Ensure that public notices are available to disadvantaged and marginalized communities.
- 7.4. Improve the readability of public documents, including CEQA documents, staff reports, and lease applications. Use fewer acronyms and common language and, where appropriate, will be translated and provided in all threshold languages⁷.
- 7.5. Incorporate environmental justice topics and concerns into consultations under the Commission's Tribal Consultation Policy.

⁷ "Threshold Language" means a language that has been identified as the primary language, as indicated on the MEDS, of 3,000 beneficiaries or five percent of the beneficiary population, whichever is lower, in an identified geographic area (9 CA ADC § 1810.410 (a)(3)).

- 7.6. Where appropriate, send knowledgeable staff to environmental justice-oriented events around the State to share information about the Commission, build relationships, improve public participation, and respond to and address issues and concerns from impacted communities.

Goal 8.0: MAKE BETTER USE OF TECHNOLOGY.

Strategies to Accomplish this Goal:

- 8.1. Develop geographic or subject-matter e-lists to quickly distribute updates and information to interested individuals and groups.
- 8.2. Increase information available on the Commission's website and social media platforms.

Goal 9.0: ENCOURAGE COMMUNITY-ORIENTED LESEES.

The Commission will work to leverage its ownership and management authority over Public Trust and school lands to promote healthy communities around those lands by considering the values and the risks that a potential lessee will bring to those communities based on their unique needs and vulnerabilities.

Strategies to Accomplish this Goal:

- 9.1. Work with potential lessee's early in the planning process to develop projects that will be consistent with the Public Trust and will reduce impacts and provide benefits to the vulnerable neighboring communities.

Goal 10.0: ENSURE ACCOUNTABILITY

The Commission and its staff will be held accountable through measurable goals and mechanisms for evaluating and retooling strategies. The Commission will regularly measure success and reflect upon the effectiveness of this policy and its implementation. Staff will review the information provided by the public, environmental justice communities, Tribes, and others to ensure that it fulfills the policy expectations and is benefitting vulnerable communities. The Commission will use this review to determine if revisions are needed to improve the policy's effectiveness or adapt it to reflect new concerns, issues, or laws.

Strategies to Accomplish this Goal:

- 10.1. Establish a standing external environmental justice advisory group that will meet 1-4 times annually and advise the Commission and staff on the effectiveness of the Commission's environmental justice policy and implementation plan.

10.2. Adopt methods for determining effectiveness in implementing the policy and establish performance measures to ensure that the policy is benefitting marginalized, disadvantaged, and tribal communities.

10.3. Seek feedback on the implementation of the policy and identify ways to measure how well it is working.

10.4. Present an annual status report to the Commission to inform the Commissioners of steps taken to implement of the Policy.

10.5. Revise the policy and implementation plan as needed to reflect lessons learned and policy or implementation shortcomings identified through the assessment process or public consultation.

From: Eric Aaholm [mailto:eric@yesfamilies.org]

Sent: Tuesday, November 06, 2018 2:39 PM

To: Selvaraj, Sumi@Coastal

Subject: Re: Coastal Commission's Draft Environmental Justice Policy and 11/7/18 Pubic Presentation in San Francisco

Hi Sumi,

Thank you for reaching out. Unfortunately my calendar won't allow me to participate in these meetings, however, I did review the draft EJ policy and support the inclusive and equitable language that has been included.

Thanks, and best wishes as you and your team move the policy forward on our behalf,

Eric

From: Alex Dashman (clinic) [mailto:adashman.clinic@law.uci.edu]
Sent: Tuesday, November 06, 2018 5:11 PM
To: EnvironmentalJustice@Coastal
Cc: Marce Graudinš; Casey Powell (clinic); Brett Korte (clinic); Michael Robinson-Dorn
Subject: Public Comment on November 2018 Agenda Item Wednesday 7f - Environmental Justice Draft Policy

Dear California Coastal Commission,

Please find attached comments submitted on behalf of Azul on the California Coastal Commission's Draft Environmental Justice Policy (Item Wednesday 7f).

Best Regards,
Alex Dashman & Casey Powell o/b/o Azul
Certified Law Students
University of California, Irvine School of Law

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UCI University of
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November 7, 2018

Sent via Electronic Mail.

environmentaljustice@coastal.ca.gov

Jack Ainsworth, Executive Director
California Coastal Commission
45 Fremont St., Suite 2000,
San Francisco, CA 94105- 2219

RE: COMMENTS ON THE CALIFORNIA COASTAL COMMISSION'S DRAFT ENVIRONMENTAL JUSTICE POLICY

Dear Executive Director Ainsworth,

The University of California, Irvine Environmental Law Clinic submits this letter on behalf of Azul to provide comments on the California Coastal Commission's Draft Environmental Justice Policy. Azul is a grassroots nonprofit organization founded in 2011 to address the lack of Latinx voices and perspectives in ocean conservation and coastal access policy. Since its inception, Azul has led efforts to reduce ocean pollution, increase Latinx involvement in marine advocacy, and ensure that all Californians can enjoy the benefits of the ocean and coastline. Over 240,000 Latinx individuals live within one kilometer (0.62 miles) of the coast, over one million live within ten kilometers (6.21 miles) of the coast, and over 11.5 million live within 100 kilometers (62.14 miles) of the coast.¹

Azul supports the Coastal Commission's effort to extend the Environmental Justice Policy beyond the requirements of Assembly Bill 2616. Unfortunately, the Draft Environmental Justice Policy ("Draft Policy") fails to adequately enumerate substantive or procedural safeguards necessary to address environmental justice concerns. Latinx communities have a profound interest in healthy coastal ecosystems and equitable commercial, subsistence, and recreational access to coastal resources.² A robust and effective Final Policy will help protect this interest for Latinx communities, who comprise 38.2% of California's population.³ Access to no- and low-cost coastal resources is especially important to Latinx communities living farther from the coast — communities who face greater difficulty and incur greater costs accessing them.⁴

¹ Dan R. Reineman, et al., *Coastal Access Equity and the Implementation of the California Coastal Act*, 36 STAN. ENVTL. L. REV. J. 89, 105 (2016).

² See generally LUKE W. COLE & SHEILA R. FOSTER, FROM THE GROUND UP: ENVIRONMENTAL RACISM AND THE RISE OF THE ENVIRONMENTAL JUSTICE MOVEMENT 19-33 (2001) (discussing the environmental justice movement, including Latinx involvement).

³ See Reineman, et al., *supra* note 1, at 105.

⁴ *Id.* at 98.

Azul is eager to support the Coastal Commission's effort to develop a more effective Final Policy, and offers these comments to show how the Final Policy can better promote environmental justice. Azul offers two broad categories of comments: policy-wide comments and comments specific to planning and permitting provisions. Detailed explanations of each comment follows. Azul reserves the right to rely on any other comments submitted in response to the Draft Policy.

I. Policy-Wide Comments

- I.A. The Coastal Commission Should Describe Substantive and Procedural Rights Encompassed in Environmental Justice in Detail, Describe Specific Measures to Remedy Inequitable Coastal Management, and Address Other Environmental Justice Issues With Greater Specificity Throughout the Final Policy.**
- I.B. The Coastal Commission Should Recognize That the Constitutional Right of Access to Navigable Waters Encompasses Environmental Justice.**
- I.C. The Coastal Commission Should Shift the Responsibility of Demonstrating Impacts of Proposed Projects Away from Overburdened or Vulnerable Communities.**
- I.D. The Coastal Commission Should More Accurately Identify Environmental Justice Representatives.**
- I.E. The Coastal Commission Should Elaborate on Plans for Updating Hiring and Training Practices.**

II. Planning and Permitting Comments

- II.A. The Coastal Commission Should Recommend That Local Governments Amend Their Local Coastal Programs to Address Environmental Justice Issues.**
- II.B. The Coastal Commission Should Determine That Inadequate Consideration of Environmental Justice is Grounds for Appealing a Coastal Development Permit.**
- II.C. The Coastal Commission Should Condition Permits on the Elimination or Mitigation of Any Potential Significant Impacts on Vulnerable Communities.**
- II.D. The Coastal Commission Should Prioritize Areas of Particular Concern to Vulnerable Communities Threatened by Climate Change in Future Coastal Planning.**

I. Policy-Wide Comments

A. The Coastal Commission Should Describe Substantive and Procedural Rights Encompassed in Environmental Justice in Detail, Describe Specific Measures to Remedy Inequitable Coastal Management, and Address Other Environmental Justice Issues With Greater Specificity Throughout the Final Policy.

The Draft Policy states that environmental justice encompasses both substantive and procedural rights,⁵ and acknowledges that “much of [the Coastal Commission’s] work has been largely shaped by coastal residential, commercial, and industrial landowners, without sufficient consideration for those whose lives and livelihoods are connected to our coasts . . . but cannot afford the staggering cost of land adjacent to the California shoreline.”⁶ This is the only mention of historic inequitable coastal management in the Draft Policy.

Although the Coastal Commission recognizes that substantive and procedural rights mean “equitable distribution of environmental benefits” and “equitable access to the process where significant environmental and land use decisions are made,” the Coastal Commission fails to explain what, specifically, these substantive and procedural rights encompass.⁷ Acknowledging prior injustice in coastal management and enumerating these rights would better inform the Coastal Commission’s future management of coastal resources, help the Commission to avoid repeating its past failures, and better protect these important substantive and procedural rights.

To address this vagueness, Azul recommends that the Coastal Commission elaborate on the substantive and procedural rights included within environmental justice, and incorporate language discussing historic inequitable coastal management throughout the Final Policy. To facilitate better protection of these substantive and procedural rights, Azul also recommends that the Coastal Commission include in the Final Policy all information available to the state that demonstrates a pattern of historic inequitable coastal management. The inclusion of this information would establish a baseline from which to measure future progress and would allow the Coastal Commission to tailor solutions to environmental injustice to protect those substantive and procedural rights.

Similarly, the Coastal Commission has indicated that it intends the Environmental Justice Policy to be only a general guideline, leaving measures aimed at addressing specific environmental justice issues to be discussed in the forthcoming Five-Year General Plan.⁸ If left unchanged, the Final Policy would not address or attempt to promote environmental justice in any meaningful way before the eventual development of the Five-Year Plan. If the Coastal Commission wishes to meaningfully address environmental injustice, then it should do so in the Final Policy, and not at an unspecified later date in a document that must be redrafted every five years. More importantly, to embrace the spirit of Assembly Bill 2616, the Final Policy must address environmental justice issues in greater detail, which would productively inform every future Five-Year General Plan prepared by the Coastal Commission by establishing clear

⁵ CALIFORNIA COASTAL COMMISSION, DRAFT ENVIRONMENTAL JUSTICE POLICY 5 (2018).

[https://documents.coastal.ca.gov/assets/env-justice/EJ%20Draft%20Policy_Public%20Review%20Draft\(8.30\).pdf](https://documents.coastal.ca.gov/assets/env-justice/EJ%20Draft%20Policy_Public%20Review%20Draft(8.30).pdf)

⁶ *Id.* at 2.

⁷ *Id.* at 5.

⁸ See e.g. California Coastal Commission, *Overview of the Coastal Commission's Draft Environmental Justice Policy*, YOUTUBE (Oct. 1, 2018), <https://www.youtube.com/watch?v=YgyOdiWmXIw> at 19:00 (describing the Five-Year Plan), 45:21 (describing the generality of the Final Policy).

expectations and goals for all future planning. The following comments identify some of the substantive and procedural rights encompassed in environmental justice, and describe measures to more effectively protect those rights.

B. The Coastal Commission Should Recognize That the Constitutional Right of Access to Navigable Waters Encompasses Environmental Justice.

Azul requests that the Final Policy clearly state that failing to adequately consider environmental justice when issuing Coastal Development Permits (CDPs) violates the constitutional right of equitable access to the coast. The California Constitution protects the right of access to navigable waters for all members of the public.⁹ Environmental Justice cannot be achieved without recognizing equitable access to the coast as a fundamental vested right. Offering clear and direct guidance for coastal decision-making will provide greater administrative and judicial protection of the substantive and procedural rights encompassed within environmental justice.

C. The Coastal Commission Should Shift the Responsibility of Demonstrating Impacts of Proposed Projects Away from Already Overburdened or Vulnerable Communities.

Environmental justice communities face severe hurdles engaging in administrative hearings for proposed developments, which will often be approved if community members do not participate in the administrative process or otherwise display their opposition to the project.¹⁰ This arrangement disadvantages individuals from overburdened communities for whom it is already more difficult to bear the costs of missing work, traveling to hearings, or otherwise spending time engaging with decision-makers to keep development harmful to the communities at bay.¹¹

The Coastal Commission has described the Final Policy as a tool for advocacy organizations, suggesting that the Coastal Commission would rely on advocacy groups and outside researchers to identify potential disproportionate impacts of proposed projects on vulnerable communities.¹² This arrangement would continue to burden vulnerable communities and the advocacy organizations representing them with the costs – monetary or otherwise – of organizing and assembling information to demonstrate a project’s impacts on their communities.¹³

Azul recommends that the Final Policy state that the onus will be on the Coastal Commission to initiate its own research and fact-finding to study potential environmental justice impacts of each project. The Coastal Commission should delegate that work to its own staff, or partner with universities or nonprofits, provided that the Coastal Commission supports these organizations monetarily when necessary. Either approach would better ensure that the potential

⁹ See CAL. CONST. art. X § 4.

¹⁰ See generally Cole & Foster, *supra* note 2, at 6-7.

¹¹ *Id.*

¹² *Overview of the Coastal Commission's Draft Environmental Justice Policy*, *supra* note 8, at 51:10.

¹³ See Robert D. Bullard & Glenn S. Johnson, *Environmental Justice: Grassroots Activism and Its Impact on Public Policy Decision Making* 56 CLARK ATLANTA U. J. SOC. ISSUES 560-64 (2000), available at: <http://www.unc.edu/courses/2005spring/epid/278/001/Bullard2000JSocIssues.pdf>

harmful impacts of proposed projects will be considered, and that communities with fewer resources will be able to better articulate their concerns without shouldering additional burdens.

If the Coastal Commission is unable to incorporate the above comment into the Final Policy, then the Final Policy should explicitly acknowledge that relying on communities to provide evidence of negative impacts will continue to disadvantage overburdened communities, and express support for state funding for programs that will reduce or eliminate that burden.

D. The Coastal Commission Should More Accurately Identify Environmental Justice Representatives.

Although Azul supports the Coastal Commission receiving feedback from environmental justice communities on proposed projects to better inform Coastal Commission and local government decision-making,¹⁴ Azul is concerned that groups with other interests—such as those supportive of a particular development—will falsely represent environmental justice community opinions on a proposed project through astroturfing—the organized effort to create the false impression of a grassroots movement.¹⁵ In the Final Policy, the Coastal Commission should commit to establishing a specific method to identify and prevent astroturfing.

For example, the Coastal Commission could request that those providing information to the Coastal Commission to declare their interests and sources of funding. Another potential approach is for the Coastal Commission to specifically seek input from groups truly representative of vulnerable or overburdened communities, determined by identifying the geographic area the group represent, if applicable, and examining other indicators such as those provided by CalEnviroScreen, including poverty, linguistic isolation, and housing burdens¹⁶ None of these actions would exclude groups from contributing to conversations about environmental justice, but would help the Coastal Commission to identify the voices and concerns of groups that are truly representative of overburdened or vulnerable communities.

E. The Coastal Commission Should Elaborate on Plans for Updating Hiring and Training Practices.

The Draft Policy contains no information regarding the continued training of Coastal Commission staff on issues pertaining to environmental justice. Measures incorporated in the Coastal Commission's own Tribal Consultation Policy that more effectively address environmental justice concerns than those in the Draft Policy include provisions for the Tribal Liaison to train Coastal Commission staff in: the history of mistreatment of Native Americans; law and regulations protecting Cultural Resources; tribal sovereignty; and the implementation of the Tribal Consultation Policy.¹⁷ Azul recommends that the Coastal Commission include in the

¹⁴ DRAFT ENVIRONMENTAL JUSTICE POLICY, *supra* note 5, at 12.

¹⁵ See *astroturfing*, MERRIAM-WEBSTER DICTIONARY, <https://www.merriam-webster.com/dictionary/astroturfing> (last visited Nov. 1, 2018).

¹⁶ CalEnviroScreen reports are available at <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30>

¹⁷ CALIFORNIA COASTAL COMMISSION, TRIBAL CONSULTATION POLICY 7 (2018). <https://documents.coastal.ca.gov/assets/env-justice/tribal-consultation/CCC%20Tribal%20Consultation%20Policy%20Adopted%208.8.2018.pdf>

Final Policy similar employment and training provisions as those contained in the Tribal Consultation Policy, such as hiring an Environmental Justice Liaison to conduct trainings for staff on both the history of the mistreatment of environmental justice communities and procedures for implementation of the Final Policy. Azul also recommends that the Coastal Commission consider integrating the forthcoming Government Alliance on Race and Equity (GARE) social equity plan into the Final Policy. These measures will allow the Coastal Commission to develop and disseminate critical institutional knowledge of issues facing vulnerable communities.

II. Planning and Permitting Comments

A. The Coastal Commission Should Recommend That Local Governments Amend Their Local Coastal Programs to Address Environmental Justice Issues.

In the Executive Summary of the Draft Policy, the Coastal Commission notes that the Draft Policy was created as one component of a larger effort to “go beyond the requirements of [Assembly Bill 2616] and embrace the spirit of this law.”¹⁸ That objective cannot be fulfilled without a means of addressing environmental justice at the local level. Azul requests that the Coastal Commission integrate measures into the Final Policy directing local governments to consider environmental justice in a manner consistent with the Final Policy for all future coastal planning decisions.

Azul specifically requests that the Coastal Commission add language to the Final Policy providing for the review of all Local Coastal Programs (LCPs) to ensure compliance with the Final Policy no later than a date certain, such as December 31, 2020. Doing so will facilitate more immediate redress of environmental injustice by forcing local governments to consider environmental justice in developing their LCPs.

The Final Policy should also state that the Coastal Commission shall recommend actions or amendments necessary to reduce any disparate impacts on vulnerable communities resulting from existing LCPs.¹⁹ Additionally, Azul recommends that the Coastal Commission monitor the progress of amended LCPs each time it reviews them for conformity with the Coastal Act, and reiterate any previous recommendations that local governments did not previously incorporate into LCPs. These measures will clarify how LCPs will be affected by implementation of the Final Policy, and provide for regular review and monitoring of LCPs to assess how effectively they are addressing environmental injustice.

B. The Coastal Commission Should Determine That Inadequate Consideration of Environmental Justice is Grounds for Appealing a Coastal Development Permit.

The Coastal Commission has not explained whether failure to consider environmental justice constitutes nonconformity with the public access policies of the Coastal Act and is grounds for an appeal of a local government decision, even though Assembly Bill 2616 grants the Coastal Commission authority to consider environmental justice in its decisions.²⁰ Azul

¹⁸ DRAFT ENVIRONMENTAL JUSTICE POLICY, *supra* note 5, at 2.

¹⁹ The Coastal Commission is required to review each LCP at least once every five years but is not barred from reviewing LCPs more frequently if it chooses. *Pub. Res. Code*, § 30519.5.

²⁰ *Act of Sept. 24, 2016 Ch. 578, 2016 Cal. Stat.*; *See Pub. Res. Code* § 30604(h).

requests that the Coastal Commission declare in the Final Policy that inadequate consideration of environmental justice constitutes a violation of the public access policies in Chapter 3 of the Coastal Act.²¹ Such a determination would explicitly allow for direct appeals to the Coastal Commission when local governments do not adequately consider environmental justice in issuing CDPs. Additionally, such a determination would incentivize local governments to amend their LCPs to address environmental injustice.

C. The Coastal Commission Should Condition Permits on the Elimination or Mitigation of Any Potential Significant Impacts on Vulnerable Communities.

The Coastal Commission should state in the Final Policy that issuance of CDPs shall be conditioned on the elimination or mitigation of impacts on vulnerable communities. The Coastal Commission may impose mitigation conditions on CDPs for various purposes, such as upholding the policies of the Coastal Act or the California Environmental Quality Act.²² Therefore, the Coastal Commission may impose conditions on permits to promote environmental justice and to comport with the Final Policy. Azul recommends that the Final Policy state that, where the potential for significant disparate impacts on vulnerable or overburdened communities are found, the Coastal Commission shall condition permits on the inclusion of mitigation measures that will eliminate the risk of those disparate impacts. In other words, if the permit applicant cannot eliminate or completely mitigate the risk, the Coastal Commission shall not grant the permit. Imposing such a strict mitigation requirement would provide the most effective means to protect vulnerable or overburdened communities. However, if the Commission declines to incorporate the above recommendation into the Final Policy, Azul recommends that, at a minimum, the Coastal Commission require any significant impacts on vulnerable communities be mitigated to the maximum extent feasible.

D. The Coastal Commission Should Prioritize Areas of Particular Concern to Vulnerable Communities Threatened by Climate Change in Future Coastal Planning.

Although the Draft Policy acknowledges that vulnerable communities bear disproportionate impacts of climate change, it offers no indication as to how the Coastal Commission will take those impacts into consideration.²³ To address this gap, Azul recommends that the Coastal Commission state in the Final Policy that, when planning for the effects of

²¹ CDPs issued by local governments may be appealed to the Coastal Commission if they do not conform with the policy guidelines set forth in Chapter 3 of the Coastal Act. *Pub. Res. Code*, § 30603(b). One of these policies, Public Resources Code § 30210, mandates the provision of maximum public access and recreation opportunities to all people. *Pub. Res. Code*, § 30210.

²² See, e.g. CALIFORNIA COASTAL COMMISSION, PROCEDURAL GUIDANCE FOR EVALUATING WETLAND MITIGATION PROJECTS IN CALIFORNIA'S COASTAL ZONE, (Oct. 18, 2018 11:27 PM), <https://www.coastal.ca.gov/weteval/we4.html> (describing categories of acceptable compensatory mitigation measures for wetlands development); CALIFORNIA COASTAL COMMISSION, STAFF REPORT: CDP HEARING 3-18-0286 10 (Aug. 24 2018) <https://documents.coastal.ca.gov/reports/2018/9/Th13a/Th13a-9-2018-report.pdf> (CDP conditioned on subsurface reconnaissance for significant cultural materials at the proposed site of a residence in the Asilomar Dunes); CALIFORNIA COASTAL COMMISSION, STAFF REPORT: CDP HEARING 3-18-0777 12 (Aug. 23 2018), <https://documents.coastal.ca.gov/reports/2018/9/Th13b/Th13b-9-2018-report.pdf> (CDP conditioned on containment systems for construction debris for a proposed bridge pathway over the San Lorenzo River).

²³ DRAFT ENVIRONMENTAL JUSTICE POLICY, *supra* note 5, at 14.

climate change and making decisions that potentially impact coastal access, the Coastal Commission shall prioritize the protection of “access hotspots.”²⁴ Access hotspots are areas that provide coastal access to more diverse populations, who are more likely to come from communities facing environmental justice issues.²⁵ Azul recommends that the Final Policy also state that, in responding to effects of climate change such as sea-level rise, the Coastal Commission shall condition CDPs in regions with access hotspots on the elimination or mitigation of any access-limiting impacts. These commitments will better ensure that the access areas most important to environmental justice communities are adequately protected in the face of rising seas and an inevitably changing climate.

Conclusion

In conclusion, Azul respectfully requests that the Coastal Commission revise the Draft Environmental Justice Policy to incorporate the comments provided above. Azul thanks the Coastal Commission for its careful consideration of these comments, and looks forward to continuing to support the Coastal Commission in its efforts to attain equitable coastal management for all Californians.

²⁴ See Reineman, et al., *supra* note 1, at 104.

²⁵ See Bullard & Johnson, *supra* note 13, at 562.



Marce Gutiérrez-Graudiņš
Founder and Director
Azul



Alex Dashman
Casey Powell
Certified Law Students
Environmental Law Clinic
UC Irvine School of Law

cc. Brett M. Korte
Clinical Fellow
Environmental Law Clinic
UC Irvine School of Law

From: Noel Johnston [mailto:noel.only@verizon.net]
Sent: Tuesday, November 06, 2018 6:33 PM
To: EnvironmentalJustice@Coastal
Subject: Justice for all

Your definition of “Environmental Justice” is frighteningly narrow.

Please think about the oceans, coastal conditions, and their dependent species. Yes. Before people.

There are nearly 8 billion people in the world. We have reached pest status, as we are now the most populous mammal on the planet, outstripping rats by an unknown but considerable margin. We humans have no predators threatening us (except ourselves) and we are the dominant species on the planet, proliferating wildly and encroaching on all habitats, consuming and decimating as our population continues to grow unchecked.

Please think about how “fair treatment” could be expanded upon. Think how to keep oceans and coasts clean and clear. Help sustain species other than our own. Try to be fair to the globe and not focus strictly on homo sapiens, a species that has proven to be not so wise after all.

Thank you for thinking about this as you ponder AB2616 and its implications.

Respectfully,

Noël C. Johnston

From: Oceano Beach Community Association [mailto:oceanobeachca@gmail.com]
Sent: Wednesday, November 07, 2018 6:52 AM
To: EnvironmentalJustice@Coastal
Subject: OBCA comments on draft EJ policy

Please see our comment letter, attached.

Best,
Cynthia Replogle, President
Oceano Beach Community Association
[805-321-0073](tel:805-321-0073)
oceanobeach.org



Oceano Beach Community Association
1501 24th St, Oceano, CA 93445
oceanobeach.org

November 6, 2018

Environmentaljustice@coastal.ca.gov

We thank the Coastal Commission for sending members of the Environmental Justice team to tour Oceano and meet with residents on November 1st. The draft environmental justice policy contains a provision for Meaningful Engagement, as exemplified by your team's visit, and we hope that this outreach will continue.

Despite being an oceanfront community with a long stretch of lovely beach, Oceano residents do not currently have many of the low-cost recreational activities identified in the Coastal Access section of the draft policy, due to the ownership of our beach by the vehicle-focused State Parks department. Our unincorporated town is negatively impacted in numerous ways by allowing thousands of vehicles to enter Oceano's beach via Pier Avenue and drive miles south along a "sand highway" to the off-highway vehicle riding area. Heavy truck and trailer traffic on Pier Avenue makes the street unsafe for pedestrians and bicyclists, and creates noise and clouds of unhealthy dust and sand. Our economically-disadvantaged community is being held back from redevelopment of this potential business corridor because of State Park's use of our street as its gateway to the Oceano Dunes State Vehicular Recreation Area. Along Pier Avenue, there are shuttered shops and restaurants, for sale signs that have been in place for years, and neglected, litter-strewn and weedy lots. The residents of the beach town of Oceano do not have a safe beach of our own. We cannot take our dogs for a peaceful walk, or enjoy watching the sun set into the ocean with our families, or cross the sand to surf, without checking for traffic and worrying about inattentive drivers mowing us down. Oceano is not the "Gateway to the Dunes" but rather the "Doormat of the Dunes."

Additionally, the degradation of the natural environment due to intensive vehicle use of the ODSVRA may make Oceano more vulnerable to the changing climate, as the natural dunes provide a bulwark against rising sea levels. We appreciate that the draft policy considers Climate Change impacts.

We support the draft policy's Access to Process provision, especially as State Parks does not hold meetings concerning its administration of the ODSVRA in Oceano. Accountability and Transparency are also extremely important.

Thank you for your efforts on behalf of environmental justice.

Sincerely,

A handwritten signature in black ink that reads "CynR".

Cynthia Replogle

President

Oceano Beach Community Association

From: Dina Gilio-Whitaker [mailto:dina@cwis.org]

Sent: Wednesday, November 07, 2018 9:56 AM

To: Selvaraj, Sumi@Coastal

Cc: EnvironmentalJustice@Coastal

Subject: Re: Updates on Coastal Commission's Draft Environmental Justice Policy and Final Days for Public Comment

Hi Sumi,

Thanks for reaching out. My only other input would be to make the following changes/additions:

The Commission respectfully acknowledges the painful history of Native American genocide among our nation's first people and honors the efforts of California's coastal tribes to rebuild thriving, living cultures based on traditional knowledge, languages, and practices. We commit to regular and meaningful partnership to ensure that tribes are valued and respected contributors to the management of California's coast. In addition to the Commission's formal tribal notification and consultation policy, the Commission will work collaboratively with tribes **on a government-to-government basis** to better understand the significance of local and regional cultural concerns, including but not limited to access to and protection of areas of cultural significance, ethnobotanical resources, traditional fishing and gathering areas, and access to and protection of sacred sites.

Adding this language does two things: 1) it affirms the sovereignty of tribes, whether they are federally recognized or not, and is an important step in helping to overcome the genocidal history that was part of the robbing of California Indians of their nationhood. 2) It affirms their collectivity. CCC EJ policy should acknowledge working with tribes as governments, not with Indians as individuals.

That's it for now. Great work!

Best,

~Dina Gilio-Whitaker

Environmental Justice Policy and Education Consulting
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www.dgwconsulting.org
www.dinagwhitaker.wordpress.com
Find me on Twitter, @DinaGWhit

From: Livia Beaudin [mailto:livia@cerf.org]
Sent: Wednesday, November 07, 2018 2:17 PM
To: EnvironmentalJustice@Coastal
Cc: Erika Cueva
Subject: CERF Comments -- Environmental Justice Policy

Please find attached CERF's comments on the Commission's draft Environmental Justice Policy.

Thank you,

Livia Borak Beaudin
Legal Director
Coastal Environmental Rights Foundation





November 7, 2018

California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94118

Via Electronic Mail
environmentaljustice@coastal.ca.gov

RE: CERF Comments on Environmental Justice Policy

Dear Commissioners:

On behalf of the Coastal Environmental Rights Foundation (CERF), please accept the following comments on the Coastal Commission's Draft Environmental Justice Policy. CERF is a nonprofit environmental organization founded by surfers in North San Diego County and active throughout California's coastal communities. Our organization is dedicated to the enforcement of environmental laws and raising public awareness about coastal environmental issues. CERF commends the California Coastal Commission's ongoing efforts to develop and finalize its Environmental Justice Policy.

CERF is excited to see the Commission taking steps to ensure the interests of all Californians, specifically our underserved communities, are considered in decision-making processes via the implementation of an Environmental Justice Policy. However, CERF implores the Commission to incorporate specific references within the Policy related to coastal development permits and local coastal programs (LCP). The most important aspect of the Policy will be implementation.

CERF is encouraged by the Commission's draft Policy, the hard work and outreach of Commission staff, and the Commission's timeline for adoption of the Policy. However, CERF is hopeful the Commission will prioritize implementation of specific environmental justice goals within its Five-Year Strategic Plan update and in its review of permits and LCPs – especially in the context of expanding coastal access to traditionally underserved communities.

Thank you in advance for your consideration of our comments.

Sincerely,

Coastal Environmental Rights Foundation

Livia B. Beaudin
Legal Advisor



From: Rene Aiu [mailto:aiurene@gmail.com]
Sent: Wednesday, November 07, 2018 2:30 PM
To: Selvaraj, Sumi@Coastal
Cc: EnvironmentalJustice@Coastal
Subject: Re: Updates on Coastal Commission's Draft Environmental Justice Policy and Final Days for Public Comment

Here are my comments on the policy draft:

1) For the environmental justice policy to be meaningful and relevant, environmental justice would need to have equal weight in the decision-making rulings of the Commission as the other factors as public access and environmental impact, etc. To do this, more specifics on what factors would need to be evaluated in order to determine if environmental justice was an issue of any permit. What are the key essential components that would impact environmental justice? How would one substantiate that environmental justice was being effected?

The concept is relevant today. I applaud the Commission and staff for pushing this issue forward.

2) Participation in the Coastal Commission's procedures and process require not only access but knowledge about projects, permits and issues that might affect them. This is not an area easy to navigate as many issues remain "hidden" or obscured within local processes and when brought up to the Coastal Commission review may be too late in the process for the public to impact effectively. For public participation in coastal development and protection to be effective and relevant, Local Coastal Plans and Public Works Plans all need to be maintained and reasonably updated for any Coastal Commission decisions to be knowledgeable. Many communities are frustrated by "piecemeal" planning tactics which prevent the public and Coastal Commission from making good decisions. This is based upon my experience, though limited to Ventura County. This is the stage were public participation can be most relevant and access most open.

If the environmental justice policy is to be effective and relevant, it must start with an open and transparent plan for each appropriate area of the California coast. Without a current plan for an entire area, it will be difficult for environmental justice to occur.

Rene Aiu

From: Therese Kollerer [mailto:hounds.mama@yahoo.com]
Sent: Wednesday, November 07, 2018 3:30 PM
To: EnvironmentalJustice@Coastal
Subject: Environmental Justice Policy

Dear California Coastal Commission:

As you articulate your Environmental Justice Policy, I urge you to consider that the very populations and communities that may need your extra consideration in this regard may not have the resources to identify and present their case to the California Coastal Commission. The CCC may need to have internal staff devoted to being ombudsmen for these groups.

I concur with comments made in person by Kathy Biala and others from Citizens for Just Water of Marina, CA, at the November 7, 2018 meeting of the CCC regarding Environmental Justice Policy considerations.

Sincerely,
Therese Kollerer

From: Cynthia Hawley [mailto:cynthiahawley@att.net]
Sent: Wednesday, November 07, 2018 4:45 PM
To: EnvironmentalJustice@Coastal
Subject: Home Front Morro Bay comments on Draft Environmental Justice Policy

Attached please find additional comments on the Draft Environmental Justice Policy submitted by Home Front Morro Bay

Thank you,

Cynthia Hawley

Cynthia Hawley, Attorney

P.O. Box 697

Morro Bay, CA 93443

cynthiahawley@att.net

Phone: (805) 776-5102

Facsimile: (805) 776-5103

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COMMENTS ON THE COASTAL COMMISSION'S
DRAFT ENVIRONMENTAL JUSTICE POLICY

By Cynthia Hawley on behalf of
HOME FRONT MORRO BAY

November 7, 2018

Home Front Morro Bay requests and urges two important changes to the language of the Coastal Commission's Draft Environmental Justice Policy. We request these changes because the phrases are incorrect and would provide grounds for courts not to uphold consideration of environmental justice in actions on coastal development permits.

First Home Front requests an amendment to the statement that "The California Coastal Commission's commitment to diversity and environmental justice recognizes that the Coastal Act is an inherently equitable law, designed to protect California's coast and ocean commons for the benefit of all the people."

The claim that the Coastal Act is "an inherently equitable law, designed to protect California's coast...." is incorrect. The equal rights to protection of coastal resources and to access and use of coastal resources are provided and secured by the California Constitution and the legally enforceable policies and statutes within the Coastal Act and the Local Coastal Programs. These are the laws that were designed and enacted, and that can be enforced to protect coastal resources.

"Equitable law", or law in equity, is, justice according to fairness as construed and imposed by the court.

The Coastal Act does not anywhere state that it is "an inherently equitable law", and the statement dangerously misconstrues the Coastal Act which is made up of policies, procedural and substantive statutes, and regulations, and is further carried out by Local Coastal Programs and implementing ordinances on which the courts must rule. The Coastal Act is statutory law, not "inherently equitable law".

This discrimination is important because this statement, as is, could be used in litigation to encourage the court to rule in equity – instead of enforce the Coastal Act and Local Coastal Programs – based on his or her interpretation of what is equitable or fair under the circumstances. This happened in Morro Bay with the result that the Court ruled in equity, rather than under the Coastal Act and property law, to allow the total elimination of a popular public easement path to the beach established over 60 years ago. While the developer was required to build a replacement trail of questionable long-term stability, the public easement was extinguished entirely from the property based on equitable law.

Construing the Coastal Act as “equitable law” is erroneous, could result, and has resulted in, harms to public access, amounts to an invitation to undermine the Coastal Act through judge-made precedents, and the statement is not necessary to get the message across. Home Front Morro Bay request that the Commission amend this sentence to read:

“The California Coastal Commission’s commitment to diversity and environmental justice recognizes that the Coastal Act is an inherently ~~equitable law~~ designed to protect California’s coast and ocean commons for the benefit of all the people.

In addition, the Coastal Act is not an “aspirational vision” by any means. Again, it is the law. And now the Coastal Commission and local agencies are empowered by the legislature to “consider environmental justice, or the equitable distribution of environmental benefits throughout the state when action of a coastal development permit.” This is not “aspirational” or a “vision”. It is the law and it gives the Coastal Commission and local agencies the broad power to “consider” environmental justice in the decision as to whether to issue coastal development permits.

Misconstruing the empowerment to consider environmental justice in a coastal development permit decision as an “aspirational vision” in this public document would provide the courts with false rationale to also misconstrue it and rule against enforcing not only Coastal Commission actions but decisions by local agencies.

Home Front Morro Bay suggests and requests this amendment:

In keeping with ~~that aspirational vision~~ the Coastal Act mandate to protect coastal resources and access and the legislative authority to consider Environmental Justice when acting on coastal development permits, the Commission as an agency is committed to applying this new authority to protecting coastal natural resources and providing public access and lower-cost recreation opportunities for everyone, …….”

Thank you for your work and for your attention to these important language changes.

From: Merri Lopez-Keifer [mailto:lopezkeifer@gmail.com]
Sent: Wednesday, November 07, 2018 4:58 PM
To: EnvironmentalJustice@Coastal
Subject: SLR Comment Letter on CCC's Environmental Justice Policy

Dear Vice Chair Turnbull-Sanders, CCC Commissioners and CCC Staff:

Attached please find a comment letter from the San Luis Rey Band of Mission Indians supporting the Coastal Commission's Environmental Justice Policy.

If you have any questions regarding the attached document, please do not hesitate to contact me directly.

Respectfully,

Merri Lopez-Keifer
Chief Legal Counsel
San Luis Rey Band of Mission Indians
(925) 457-3395
lopezkeifer@gmail.com

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SAN LUIS REY BAND OF MISSION INDIANS

*1889 Sunset Drive • Vista, California 92081
760-724-8505 • FAX 760-724-2172
www.slrmissionindians.org*

November 7, 2018

Effie Turnbull-Sanders, Vice Chair
California Coastal Commission
45 Fremont Street, Ste. 2000
San Francisco, CA 94118

VIA ELECTRONIC MAIL
environmentaljustice@coastal.ca.gov

RE: COMMENTS ON THE CALIFORNIA COASTAL COMMISSION'S DRAFT ENVIRONMENTAL JUSTICE POLICY

Dear Vice Chair Turnbull-Sanders and Commissioners of the Coastal Commission:

The San Luis Rey Band of Mission Indians ("SLR" or "Tribe"), a Luiseño California Native American tribe traditionally and culturally affiliated with California's southern coastline from Camp Pendleton through northern San Diego County, has received and reviewed the California Coastal Commission's ("CCC's") most recent Draft Environmental Justice Policy (dated September 12, 2018).

SLR is satisfied with the CCC's Environmental Justice Policy and supports the CCC's adoption of the Environmental Justice Policy Statement as reflected in the Environmental Justice Policy Statement Memo dated September 12, 2018. It is clear that the CCC staff heard the Tribe's concerns for our sacred coastline, access to coastal properties for cultural and spiritual purposes and embraced an open-mindedness to our Traditional Ecological Knowledge. SLR looks forward to continuing to develop a positive and mutually respectful relationship with the CCC. And lastly, the San Luis Rey Band of Mission Indians acknowledges and appreciates the California Coastal Commission in its commitment to protect and preserve our sacred coastline and tribal cultural resources.

Respectfully,



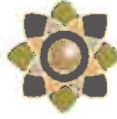
Merri Lopez-Keifer
Chief Legal Counsel
San Luis Rey Band of Mission Indians

From: Buffy McQuillen <BMcQuillen@gratonrancheria.com>
Sent: Wednesday, November 7, 2018 5:20:52 PM
To: Anastacio-Roberts, Amber@Coastal
Subject: FIGR comment letter

Hi Amber, please see attached comment letter. Please let me know if you have any questions.

Sincerely,
Buffy McQuillen
Tribal Heritage Preservation Officer (THPO)
Native American Graves Protection and Repatriation Act (NAGPRA)
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928
Office: 707.566.2288; ext. 137
Cell: 707.318.0485
FAX: 707.566.2291
bmcquillen@gratonrancheria.com

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FEDERATED INDIANS OF
GRATON
RANCHERIA

Submitted Via Electronic Email: amber.anastacio-roberts@coastal.ca.gov

November 7, 2018

John Ainsworth, Executive Director
45 Fremont, Suite 2000
San Francisco, CA 94105-2219

Re: Coastal Commission Draft Environmental Justice Policy Comment Letter

Dear Mr. Ainsworth,

The Federated Indians of Graton Rancheria's Tribal Heritage Preservation Office (THPO) has completed review of the *Coastal Commission Draft Environmental Justice Policy* and submits the following comments for your consideration.

- The Tribe supports the policy statement on page 12 of the September 12, 2018 Public Review Draft letter.
- The Statement of Principles supports a respectful approach for tribal concerns and acknowledges the genocide of Native Americans. We encourage the Commission to continue developing specific action steps to establish partnerships with Tribal Governments for access to sacred sites, and traditional gathering areas.
- Climate change is a significant issue which requires immediate action steps to protect the areas of cultural significance. We rely on traditional ecological knowledge and western science in managing our environmental systems. We encourage the Commission to support the use and application of Traditional Ecological Knowledge provided by tribal communities when available for project impact considerations.
- The Tribe encourages the Commission to establish within the project review process methods for analyzing environmental justice impacts with mitigation measures, monitoring and restrictions.

If you would like to discuss this further please contact our THPO, Buffy McQuillen at (707) 566-2288 or by email at bmcquillen@gratonrancheria.com who will facilitate further discussion and arrange for tribal consultation.

Sincerely,

Lorelle Ross, Vice Chairperson
Federated Indians of Graton Rancheria

From: Robert Garcia [mailto:rgarcia@cityprojectca.org]

Sent: Wednesday, November 07, 2018 5:42 PM

To: Bochco, Dayna@Coastal; Ainsworth, John@Coastal; Pederson, Chris@Coastal; Brownsey, Donne@Coastal; Vargas, Mark@Coastal; Sundberg, Ryan@Coastal; Peskin, Aaron@Coastal; Groom, Carole@Coastal; Howell, Erik@Coastal; Padilla, Stephen@Coastal; Faustinos, Belinda@Coastal; Mann, Zahirah@Coastal; Pendleton, Brian@Coastal; Urias, Bryan@Coastal; Escalante, Linda@Coastal; marciela.morales@coastal.ca.gov; Ward, Christopher@Coastal; Selvaraj, Sumi@Coastal; Haage, Lisa@Coastal; Christie, Sarah@Coastal; Sanchez, Jordan@Coastal; Schwartz, Noaki@Coastal

Subject: Coastal Justice and the Coastal Commission's Environmental Justice Policy Statement - 9/12/18 Public Review Draft

Dear Chair Bochco, Honorable Members of the Commission, Director Ainsworth, and Staff:

We submit these public comments to improve the California Coastal Commission ("CCC") Environmental Justice Policy Statement ("Draft Policy Statement") - 9/12/18 Public Review Draft ("Draft"). Our purpose is to promote equal access to the coastal zone and beaches for all, in compliance with state and federal equal opportunity, antidiscrimination, and environmental justice laws and policies.

Thank you for this opportunity to address these concerns. We applaud CCC's efforts to improve the original March 2017 draft. We will not dwell here on the strengths of current Draft. We are eager to meet with Commissioners and Staff again to discuss the following matters to achieve coastal justice for all.

The following is a summary of our concerns:

1. California equal opportunity and antidiscrimination law under Section 11135 et seq. applies to all programs and activities administered by CCC, and by recipients of CCC financial assistance. Protections, prohibitions, and sanctions under Section 11135 are in addition to any others imposed by law. Section 11135 is not limited only to staff and work force requirements, as the Draft Policy Statement incorrectly implies.
2. The Draft Policy Statement ignores compliance with federal equal opportunity and antidiscrimination laws, including Title VI of the Civil Rights Act of 1964 and its regulations. Those federal laws apply independently of the cited state laws.
3. The cited state and federal laws are mandatory. These laws are not merely "aspirational." It is not enough for CCC to be "committed to consideration" of those laws, as the Draft Policy Statement states.
4. The cited state and federal laws apply over and above the definition of "environmental justice" in the Coastal Act Section 30013 and Government Code Section 65040.12(e).
5. We summarize best practices and our recommendations. Please distribute these comments to all Commissioners.

Respectfully submitted,

Robert García, Founding Director-Counsel, The City Project

Yvonne Gonzalez Duncan, State Director, California LULAC (League of United Latin American Citizens)

Mark Magaña, Executive Director, GreenLatinos

Robert Bracamontes (Bob Black Crow, Yu-va'-tal 'A'lla-mal, Acjachemen Nation, Juaneno Tribe)



November 7, 2018

Chair Dayna Bochco
Honorable Commissioners
Executive Director John Ainsworth
California Coastal Commission
Via email to Commissioners and Staff

RE: Coastal Justice and the Coastal Commission's Environmental Justice Policy Statement - 9/12/18 Public Review Draft

Dear Chair Bochco, Honorable Members of the Commission, Director Ainsworth, and Staff:

1. Overview

We submit these public comments to improve the California Coastal Commission ("CCC") Environmental Justice Policy Statement ("Draft Policy Statement") - 9/12/18 Public Review Draft ("Draft"). Our purpose is to promote equal access to the coastal zone and beaches for all, in compliance with state and federal equal opportunity, antidiscrimination, and environmental justice laws and policies.

Thank you for this opportunity to address these concerns. We applaud CCC's efforts to improve the original March 2017 draft. We will not dwell here on the strengths of current Draft. We are eager to meet with Commissioners and Staff again to discuss the following matters to achieve coastal justice for all.

The following is a summary of our concerns:

1. California equal opportunity and antidiscrimination law under Section 11135 et seq. applies to all programs and activities administered by CCC, and by recipients of CCC financial assistance. Protections, prohibitions, and sanctions under section 11135 are in addition to any others imposed by law. Section 11135 is not limited only to staff and work force requirements, as the Draft Policy Statement incorrectly implies.
2. The Draft Policy Statement ignores compliance with federal equal opportunity and antidiscrimination laws, including Title VI of the Civil Rights Act of 1964 and its regulations. Those federal laws apply independently of the cited state laws.
3. The cited state and federal laws are mandatory. These laws are not merely "aspirational." It is not enough for CCC to be "committed to consideration" of those laws, as the Draft Policy Statement states.
4. The cited state and federal laws apply over and above the definition of "environmental justice" in the Coastal Act Section 30013 and Government Code Section 65040.12(e).

We summarize best practices and our recommendations below, as we have consistently raised these concerns before in meetings, conversations, and written submissions to CCC Commissioners and Staff beginning in 2016 and earlier. Please distribute these comments to all Commissioners.

2. The Draft Policy

The actual Draft Policy Statement is one paragraph and states as follows:

*The California Coastal Commission's commitment to diversity and environmental justice recognizes that the Coastal Act is an inherently equitable law, designed to protect California's coast and ocean commons for the benefit of all the people. In keeping with that **aspirational** vision, the Commission as an agency is committed to protecting coastal natural resources and providing public access and lower-cost recreation opportunities for everyone, and ensuring that those opportunities shall not be denied on the basis of race, ethnicity, gender, socio-economic status, or place of residence. The Commission recognizes that our conservation mission is best advanced with the participation and leadership of people from diverse backgrounds, cultures, races, color, religions, national origins, ethnic groups, ages, disability status, sexual orientation, and gender identity. The Commission is committed to **consideration of environmental justice principles, as the term "environmental justice" is defined in Government Code Section 65040.12(e), consistent with Coastal Act policies, during the planning, decision-making, and implementation of Commission actions, programs, policies, and activities. It is also the California Coastal Commission's goal, consistent with Government Code Section 11135, to recruit, build, and maintain a highly qualified, professional staff that reflects our state's diversity.***

Draft at pages 3, 12 (emphasis added).¹ The remainder of the Draft appears to be only commentary, and not part of the Draft Policy.

3. Coastal Justice and the Law

A principle purpose of the Coastal Act is to maximize public access and recreational opportunities along the beach and coastal zone for "*all the people.*" (Pub. Res. Code §§ 30001.5, 30210 (emphasis added); Pub. Res. Code § 30013; *Remmenga v. Cal. Coastal Com* (1985) 163 Cal.App.3d 623, 629-630; *see also* Cal. Const., art. X, § 4.) The public trust doctrine protects coastal access, recreation, health, aesthetics, and ecology. (*National Audubon Society v. Superior Court* (1983) 33 Cal. 3d 419.)

Advocates and activists have long fought for coastal justice along the California coast. *See generally* GreenLatinos, California LULAC (League of United Latin American Citizens Robert Bracamontes (Bob Black Crow, Yu-va'-tal 'A'lla-mal, Acjachemen Nation, Juaneno Tribe) & The City Project, *Free the Beach! Coastal Access, Equal Justice, and Hollister Ranch* (The City Project Policy Report 2018), www.cityprojectca.org/blog/archives/45719; Robert García, Cesar de la Vega, and Erica Flores Baltodano, *Coastal Justice and the California Coastal Act: Equity Mapping and Analysis* (The City Project Policy Report 2016), www.cityprojectca.org/blog/archives/44071; Robert García & Erica Flores Baltodano, *Free the Beach! Public Access, Equal Justice, and the California Coast* (2005) 2 Stan. J. C.R. & C.L. 143, goo.gl/RVgbJ.² *See also* Spencer Robins, *The Long Battle over Coastal Access at Hollister Ranch* (KCETLink 2018) www.kcet.org/shows/earth-focus/projects/hollister-ranch-the-last-beach-in-southern-california. "Coastal justice" recognizes "access to the coastal zone is about equal justice and human dignity and freedom." *Id.*

¹ The Draft Policy Statement without explanation omits text from sections 30013 and 11135 (ancestry, medical condition, genetic information, marital status), and income from Section 30107.3 of the Coastal Act.

² The City Project has previously presented each of these written submissions to CCC Commissioners and Staff.

The Coastal Act as amended in 2016 underscores equal access, antidiscrimination, and environmental protections apply, as follows. Section 30013 provides:

[N]o person in the State of California, on the basis of race, national origin, ethnic group identification, religion, age, sex, . . . color, . . . or disability, shall be unlawfully denied full and equal access to the benefits of, or be unlawfully subjected to discrimination, under any program or activity that is conducted, operated, or administered pursuant to this division, is funded directly by the state for purposes of this division, or receives any financial assistance from the state pursuant to this division.

The 2016 Coastal Act amendments reiterate the language of Section 11135(a).³ (*See* Pub. Res. Code § 30013 (“In order to advance the principles of environmental justice and equality, subdivision (a) of Section 11135 of the Government Code and subdivision (e) of Section 65040.12 of the Government Code apply to the commission and all public agencies implementing the provisions of this division.”).) Thus any program or activity that is conducted, operated, or administered by CCC, is funded directly by CCC, or receives any financial assistance from CCC is covered under sections 30013 and 11135.

Furthermore, protections, prohibitions, and sanctions under section 11135 et seq. are in addition to any others imposed by law. (Gov. Code § 11139.) In other words, Section 11135 protections apply independently of Section 30013.

In addition, Section 30107.3 of the Coastal Act provides: “‘Environmental justice’ means the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.”⁴ While the Draft Policy Statement focuses on “environmental justice,” that is not enough to satisfy Sections 30013, 11135, and 11139. The Draft does not provide standards to measure equity and progress and hold officials accountable for “environmental justice.” Sections 30013 and 11135 et seq. provide such standards, as discussed below.

The public has a right to fully participate in decisions affecting coastal planning, conservation, and development under the Coastal Act.⁵

Federal equal access laws and principles apply independent of the cited state laws. These laws include Title VI of the Civil Rights Act of 1964 and its regulations, as well as the President's Executive Order 12898 on environmental justice and health. *See generally* Robert García & Erica Flores Baltodano, *Free the Beach! Public Access, Equal Justice, and the California Coast* (2005) 2 Stan. J. C.R. & C.L. 143, goo.gl/RVgbJ. The Draft Policy Statement is silent on these laws. The final Policy Statement needs to address compliance with these federal laws.

³ Pub. Res. Code § 30013, added by Stats. 2016, Ch. 578, Sec. 1, effective Jan. 1, 2017.

⁴ Pub. Res. Code § 30107.3, added by Stats. 2016, Ch. 578, effective Jan. 1, 2017 (reiterating Gov. Code § 65040.12(e)).

⁵ “The Legislature . . . finds and declares that the public has a right to fully participate in decisions affecting coastal planning, conservation and development; that achievement of sound coastal conservation and development is dependent upon public understanding and support; and that the continuing planning and implementation of programs for coastal conservation and development should include the widest opportunity for public participation.” *Surfrider Fdn. v. Martins Beach* (2017), 221 Cal. Rptr. 3d 382, 393 (Ct. App. 1st Dist.), *quoting* Pub. Res. Code § 30006, *cert. denied*, Oct. 1, 2018, www.scotusblog.com/case-files/cases/martins-beach-1-llc-v-surfrider-foundation.

4. Discussion

CCC recognizes coastal injustice, climate change, and sea level rising disproportionately harm low income people, people of color, and Native Americans. Draft, p. 14.⁶ The final Policy Statement must fully address, in order to alleviate, this injustice.

California equal opportunity and antidiscrimination law under Section 11135 applies to all programs and activities administered by CCC, and by recipients of CCC financial assistance. Protections under 11135 et seq. are in addition to any others imposed by law. Gov. Code § 11139. Compliance with Section 11135 and 30013 is not limited only to staff and work force requirements and is not “aspirational.” The final Policy Statement must explicitly address this.

The cited state and federal laws apply over and above the definition of “environmental justice” in the Coastal Act section 30013 and Government Code Section 65040.12(e). The final Policy Statement must explicitly address this.

According to a Stanford Law School study, wealthy, white, senior residents enjoy greater coastal access compared to people of color and low-income people in California. There are roughly 25% more non-Hispanic white people and 30% more senior citizens compared to proportionate representation along the coast, and 52% fewer Hispanic or Latino people, 60% fewer Black or African American people, 57% fewer American Indians, and 18% fewer households below the poverty line.⁷

These coastal inequities are due in part to a continuing history, legacy, and pattern of discriminatory public and private beach, land use, and housing policies.⁸ Equal access to beaches, pools, and public waters is a compelling civil rights and environmental justice interest in California and beyond, and has been for decades. Coastal justice is not just about fun in the sun and surf; it's about equal justice, human dignity, and freedom. The Supreme Court struck down discriminatory public parks and beaches on those grounds in 1963. Civil rights workers held “wade ins” at beaches, “swim ins” at pools, and sits at lunch counters.⁹ In 2016, the “gang of 100” that demanded coastal justice from CCC included civil rights, environmental justice, health equity, education, housing, art, social justice, and other allies.¹⁰ This led to the 2016 coastal justice amendments to Coastal Act section 30013 discussed above.

⁶ CCC, *Sea Level Rise Policy Guidance: Interpretive Guidelines for Addressing Sea Level Rise in Local Coastal Programs and Coastal Development Permits* (2015) 59-60. Available at https://documents.coastal.ca.gov/assets/slr/guidance/August2015/0_Full_Adopted_Sea_Level_Rise_Policy_Guidance.pdf.

⁷ Dan R. Reineman et al., *Coastal Access Equity and the Implementation of the California Coastal Act*, 36 Stan. Env't L.J. 89 and 96, 105-08 (2016). Available at www-cdn.law.stanford.edu/wp-content/uploads/2017/11/reineman.pdf. *Accord*, Garcia, de la Vega, & Flores Baltodano, *Coastal Justice and the California Coastal Act: Equity Mapping and Analysis*, supra. CCC should rely on US EPA EJASCREEN, which includes park and beach data based on race and ethnicity, and not CalEnviroScreen, which does not. Draft 9, 14.

⁸ See *Texas Dep't of Hous. & Comty. Affairs v. Inclusive Communities* (2015) 576 U.S. ___, 135 S. Ct. 2507, slip op. at 5-7; Garcia & Baltodano, supra, at 154; Richard Rothstein, *The Color of Law: A Forgotten History of How Our Government Segregated America* (2017); Ira Katznelson, *When Affirmative Action Was White* (2005); Manuel Pastor, *State of Resistance* (2018) 5, 37-38 (segregation in California).

⁹ *Watson v. City of Memphis*, 373 U.S. 526 (1963). See, e.g., Andrew W. Kahrl, *The Land Was Ours: How Black Beaches Became White Wealth in the Coastal South* (2012); Andrew W. Kahrl, *Free the Beaches: The Story of Ned Coll and the Battle for America's Most Exclusive Shoreline* (2018); Andrew W. Kahrl, *America's segregated shores: beaches's long history as a racial battleground*, The Guardian (June 12, 2018), www.theguardian.com/world/2018/jun/12/americas-segregated-shores-beaches-long-history-as-a-racial-battleground.

¹⁰ Allies submitting public comments to CCC included Dean Robert Bullard, widely considered the “father of environmental justice,” Black Surfers Collective, the Native American Wishtoyo Foundation, Asian Pacific Policy and Planning Council, Venice Community Housing, Concerned Citizens of South LA, Diverse Environmental Leadership, Hispanic Access Foundation, Social and Public Arts Center, Anahuak Youth Sport Association, Sugar Law Center for Economic & Social Justice, Azul, Social Justice Consultants, GreenLatinos, The City Project, and mainstream environmentalists. The comments are available www.cityprojectca.org/blog/wp-content/uploads/2016/02/NGO-Ltr-Supporting-LesterFINAL_Logos.compressed-3.pdf.

While CCC has a documented history of refusing to consider environmental justice in its decision-making,¹¹ the Draft ignores that fact. The failure to implement cited state and federal laws would perpetuate this discriminatory history and pattern.

5. Best Practices and Recommendations

A 2017 committee report by the National Academies of Sciences, Engineering, and Medicine (NASEM) recommends implementing civil rights laws and strategies to alleviate environmental justice and health disparities. NASEM, *Communities in Action: Pathways to Health Equity* (2017).¹² Underestimating the concerns of people of color and low income people impedes alleviating inequities and broadening participation in environmental justice and environmental quality solutions, according to a 2018 study published by NASEM.¹³

The National Park Service Gaviota Coast study provides a best practice for CCC to draft and implement a final Policy Statement in compliance with equal opportunity, antidiscrimination, and environmental justice laws and policies. NPS emphasizes “coastal land below the mean high tide line, and the first three miles of ocean, are considered public trust resources, and thus belong to all the people of California. . . . [A]ccess and opportunities for people of all races, cultures and incomes” must be provided.¹⁴ The NPS Rim of the Valley study also provides a best practice for compliance and the final CCC statement.¹⁵

We have presented recommendations to CCC for compliance with equal opportunity, antidiscrimination, and environmental justice laws and policies. We fully incorporate those recommendations by reference here. See García, de la Vega, & Flores Baltodano, *Coastal Justice and the California Coastal Act: Equity Mapping and Analysis*, supra, at pages 2-4 (compliance, framework, data); GreenLatinos, California LULAC, Bracamontes & The City Project, *Free the Beach! Coastal Access, Equal Justice, and Hollister Ranch*, supra, at pages 9-10; García & Flores Baltodano, *Free the Beach! Public Access, Equal Justice, and the California Coast*, supra, at 203-08.

CONCLUSION

The City Project is eager to meet with Commissioners and Staff to achieve coastal justice for all, and compliance with state and federal equal opportunity, antidiscrimination, and environmental justice laws.

¹¹ Peter Douglas, the late CCC Executive Director, declared without legitimate basis that the Commission and Staff could not consider environmental justice: “[O]ur standard of review, your standard of action in this matter, is the [Local Coastal Program], and the statutory requirements for the Coastal Commission are the policies of Chapter 3, and the provisions of the Local Coastal Program, that is our standard, and neither of those include any considerations of environmental justice.” Coastal Commission McGrath power plant hearing transcript at 2009 04 09 b page 142 (using page numbers on upper right corner of each page). See also *id.* at pages 147-51, 168-70. The transcript obtained under a public record act request is on file with The City Project.

On the intentional discrimination and discriminatory impact standards, see generally GreenLatinos, California LULAC, Bracamontes & The City Project, *Free the Beach! Coastal Access, Equal Justice, and Hollister Ranch*, pages 8-9, supra, and authorities cited.

¹² www.nationalacademies.org/promotehealthequity. See pp. 11-12, 40-42, 102-105, 351-62, 464-69, 306-308, 360-62, 385-89, 429, 461-63.

¹³ Pearson et al., www.pnas.org/content/early/2018/10/23/1804698115; www.cityprojectca.org/blog/archives/45755.

¹⁴ Errata at 60. NPS, *Gaviota Coast Feasibility Study & Environmental Assessment* (2004) (NPS Study). The final, draft, errata, and transmittal letter are available at parkplanning.nps.gov/document.cfm?parkID=422&projectID=72730&documentID=80018.

¹⁵ NPS, *Rim of the Valley Corridor: Draft Special Resource Study and Environmental Assessment*, April 2015 (*Santa Monica Mountains*). Highlighted excerpts are available at www.cityprojectca.org/blog/wp-content/uploads/2015/05/NPS-ROTV-draft-study-April-relevant-excerpts-20150629.pdf.

Honorable CCC Commissioners and Staff

RE: Coastal Justice and the Coastal Commission's Environmental Justice Policy Statement

Page 6 of 6

Respectfully submitted,

Robert García, Founding Director-Counsel, The City Project

Yvonne Gonzalez Duncan, State Director, California LULAC (League of United Latin American Citizens)

Mark Magaña, Executive Director, GreenLatinos

Robert Bracamontes (Bob Black Crow, Yu-va'-tal 'A'lla-mal, Acjachemen Nation, Juaneno Tribe)

From: Lynn Ross [mailto:lrthinkgreen@gmail.com]

Sent: Wednesday, November 07, 2018 5:54 PM

To: EnvironmentalJustice@Coastal

Subject: Comment: Remove your commentary that wood-burning fires are needed and what people expect.

Dear collaborators of the environmental justice report:

The attached PDF is a new and comprehensive book regarding the harmful effects of wood smoke.

It is a scientific review written for all to comprehend. You will find that the smoke from wood-burning beach fires or camp fires is unhealthy recreation, emitting thousands of different gases, as well as fine particulate matter, ultra-fine particulate matter, and 2.5 particulate matter. Yes, sitting by a wood-burning fire is an unhealthy recreation.

Coastal commission staff member Laurie Koteen has repeatedly stated, "No one would recommend sitting by a wood-burning fire because of all the chemicals and other constituents in it." She added that there is "loads of information" about it.

In December 2015, at their Coastal Commission meeting in Monterey, commissioners stated that wood-burning fires is an "unhealthy recreation." In fact, they voted against a wood-burning proposal for Carmel Beach, allowing the city to try a three-year propane-only pilot program to potentially use as a model for other local governments. We expect to re-try this program again, since we have a new mayor as of yesterday.

Mary Shallenberger had stated that her lungs were so compromised that she could not attend her own coastal commission events when there were bonfires. This does not make her an exception, but someone with a lung condition who can best exemplify the danger of breathing smoke. She stated at the Monterey coastal commission meeting that "smoke prevents access."

We should not have to later argue this obvious and proven scientific information before the commissioners. They and Jack Ainsworth have the book in hand as well, and no one can refute this science or the harm to people. No one can refute that smoke prevents access. I understand that there are a few staff members who are ardently promoting smoke, despite its harmful effects. They are not scientists, but land planners with an extreme personal agenda to embed wood-burning fires into your final draft. Please don't de-value your work.

It is reckless and irresponsible to promote something harmful, especially since opportunities to go to the beach would have to be specifically denied to those with medical-related health problems, such as asthma and COPD, if there was smoke from wood burning.

Your draft statements indicate that the Coastal Commission endorses smoke from wood-burning fires because people "expect" and "need" them. This is backward scientifically. Public policy is supposed to protect, not harm people.

You must remove this uninformed or misinformed information to be promulgated to the public as truth; that wood-burning is essentially harmless. Many people suffer from asthma, and cannot

get anywhere near smoke that you would promote to people. Propane fires allow people to enjoy the outdoors without causing smoke-induced, reactive medical incidents, including asthmatic attacks. According to the Monterey County Health Department, there are about 41,000 people in Monterey County with asthma.

The Coastal Commission should not be seen as backward in promoting something that is scientifically unsound and unsafe. It will not only cause embarrassment, but assuredly expose you to legal liability. The Coastal Commission should not knowingly and purposefully promote scientifically harmful gases and chemicals in smoke from wood-burning fires for people to breathe. In other words, acting like tobacco companies.

The most polluted region of Monterey County is a place where asthma is common, and where many people have not visited our beaches. What is your plan? That they should go to a smoke-filled beach? To deny them their legal right to go to the entire public beach during standard hours?

Sincerely,

Lynn Ross
Carmel, CA

THE HARMFUL EFFECTS OF WOOD SMOKE AND THE GROWTH OF RECREATIONAL WOOD BURNING



barbecue



chiminea



fire pit



pizza oven

ENVIRONMENT & HUMAN HEALTH, INC.

THE HARMFUL EFFECTS OF
WOOD SMOKE
AND THE GROWTH OF
RECREATIONAL WOOD BURNING

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was made possible by a grant from
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THE HARMFUL EFFECTS OF WOOD SMOKE AND

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THE HARMFUL EFFECTS OF
WOOD SMOKE
AND THE GROWTH OF
RECREATIONAL WOOD BURNING

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THE HARMFUL EFFECTS OF WOOD SMOKE AND

I. Wood Smoke: Introduction	7
II. Components of Wood-Smoke	13
Particulate Matter	14
PM2.5	14
Sources of PM2.5 Pollution	15
PM2.5 Federal Regulations	16
Ultrafine Particles Smaller than PM2.5	17
Polycyclic Aromatic Hydrocarbons (PAHs)	19
Volatile Organic Compounds and Other Organic Contaminants	21
1,3-butadiene	21
Benzene	21
Aldehydes	22
Dioxins	22
III. Health Risks from Wood-Smoke Exposure	23
Lung Diseases	23
Chronic Obstructive Pulmonary Disease (COPD)	23
Asthma	24
Heart Diseases	26
Cancer	28
Lung Cancer	30
Breast Cancer	31
Stomach and Intestinal Cancer from Smoked Foods	33
Diabetes	35
Central Nervous System Effects and Cognitive Decline	36
Mortality	36

THE GROWTH OF RECREATIONAL WOOD BURNING

Toxicity of Wood Smoke	37
Wood Smoke vs. Other Combustion Sources	37
Wildfire Smoke Exposures.....	38
Cigarette Smoke Inhalation, Both Active and Involuntary.....	39
Vehicle Emissions	41
Coal Burning	42
Populations at Greatest Risk	44
Pregnant Women, Infants, and Young Children	44
Older Adults and Those with Lung and Heart Diseases and Diabetes.....	45
Women with Breast Cancer	45
Wood-Burning Neighborhoods	46
IV. Regulating Wood Smoke	48
Air Quality Index (AQI) Alerts	50
Air Quality Index (AQI) Limitations	52
Open Burning Regulations	52
Regulations in Allegheny County, Pennsylvania.....	55
Regulations in Connecticut	58
Regulations in San Joaquin Valley, California	61
Second-Hand Cigarette Smoke Heavily Regulated, Wood Smoke Lightly Regulated	64
V. Conclusion	69
VI. Recommendations	69
Recommendations for the Federal Government	69
Recommendations for States	70
Recommendations for City, Town, and County Governments	71
Recommendations for Individuals	71

THE HARMFUL EFFECTS OF WOOD SMOKE AND

VII. Glossary	73
----------------------------	----

VIII. Endnotes	74
-----------------------------	----

Tables and Figures

List of Tables

Table 1: Major Hazardous Pollutants in Wood Smoke.....	14
Table 2: National Ambient Air Quality Standards (NAAQS) for PM2.5	17
Table 3: Fine Particles and Cardiovascular Health Effects	27
Table 4: International Agency for Research on Cancer Classifications	28
Table 5: Facts about Diabetes in the United States	35
Table 6: Pollutants in Wood Smoke, Tobacco Smoke, and Diesel and Coal Emissions	43
Table 7: EPA's Air Quality Index (AQI) for 24-hour Fine Particle Pollution (PM2.5)	51
Table 8: Residential Open and Recreational Burning Restrictions in Northeast States	54
Table 9: Milestones in Establishing Second-Hand Smoke Policies in the U.S.	66

List of Figures

Figure 1: PM Size Comparison	15
Figure 2: Asthma Triggers	25
Figure 3: Smoked Foods: Cancer Risks	34
Figure 4: Health Effects Linked to Second-hand Smoke Exposure	40
Figure 5: PM2.5 Levels Measured Inside A Home Near A Wood-Burning Fire Pit in British Columbia.....	47
Figure 6: Increase in Homes Using Wood as Main Heating Source (2005-2012).....	49
Figure 7: Relative Emissions of Fine Particles	50
Figure 8: Air Quality Index for PM2.5 in 2016 in Pittsburgh, PA	56
Figure 9: Air Quality Monitors in Connecticut	59
Figure 10: San Joaquin Valley PM 2.5 Reduction	62

I. Wood Smoke: Introduction



- Wood smoke poses a serious danger to human health. It is known to cause and exacerbate many pulmonary and cardiovascular diseases, and these illnesses are the primary causes of mortality in the U.S.
- Despite convincing scientific evidence of health hazards, most governments have failed to effectively regulate wood burning, and wood smoke now constitutes nearly 30% of airborne particle pollution in a number of urban areas during winter months.
- Human exposure to wood smoke appears to be increasing, as more people are burning wood within or near their homes. The use of wood for heating purposes increases along with fossil fuel prices, especially in forested parts of the country where wood is both accessible and inexpensive.
- During the past 25 years, outdoor residential fireplaces, fire pits, chimineas, cooking appliances, and wood boilers (used in the summer only to produce hot water and heat swimming pools) have become increasingly common. The dynamics of the exchange

During the past 25 years, outdoor residential fireplaces, fire pits, chimineas, cooking appliances, and outdoor wood boilers (used in the summer to produce only hot water and heat swimming pools) have become increasingly common.

THE HARMFUL EFFECTS OF WOOD SMOKE AND



Emissions from wood burning, diesel fuel combustion, coal power plants, and cigarettes contain remarkably similar chemicals.

of wood smoke from outdoor burning with indoor concentrations of particulates and gases is misunderstood.

- The ability of very fine particles and gases to enter indoor environments from outdoor burning sources is well documented, and dependent upon indoor-outdoor air exchange rates. This means that those who routinely burn wood should be vigilant that they are not polluting their indoor environments to dangerous levels.
- Emissions from wood burning, diesel fuel combustion, coal power plants, and cigarettes contain remarkably similar chemicals. For areas already out of federal compliance with pollution limits from other sources of particles and volatile organic compounds, the additional contribution of wood smoke can produce dangerous conditions.
- Wood smoke from a single source normally creates a plume of visible pollution, also identifiable by its sweetness of smell. Satellite imagery with extraordinary sensitivity can easily track wood smoke many miles from its origin, along with the buildup of haze under still conditions near the source. If the source is within or near an urban block, condominium or townhouse cluster, hundreds of people may be exposed to elevated levels of particles and gases that can diminish lung function and threaten health.
- The U.S. Environmental Protection Agency has primary federal responsibility to regulate air quality, yet this agency has long-neglected the wood-burning problem, leaving it to state, local, and municipal governments.
- This disregard has led to a patchwork quilt of largely ineffective regulation by lower levels of government, and many communities have no health-protective requirements at all. Poorly funded state and local health departments are often responsible for establishing and regulating wood smoke emissions. Many expect the federal government to establish health-protective standards. When the federal government fails to do so, states and local governments must assume the responsibility as an “unfunded mandate.”

THE GROWTH OF RECREATIONAL WOOD BURNING

- Effective regulation might focus on appliance emission standards; maximum health-protective air pollution levels of particles and gases at the user's property boundary; a maximum number of wood-burning devices allowable within buildings, neighborhoods, or cities; and prohibitions against burning during still weather conditions when air pollution can increase rapidly near the ground. The absence of effective legal protection leaves most individuals to fend for themselves in attempts to persuade neighbors to use cleaner sources of fuel such as natural gas, and more efficient burning appliances for heating and cooking, both indoors and outdoors.
- There is some good news. Mandatory wood smoke reduction programs in California have resulted in significant reductions in ambient PM_{2.5} concentrations and a decrease in measured health effects. This is consistent with a large body of data demonstrating that as particulate air pollution declines, public health improves.¹ A number of state and local governments have prohibited burning during still weather patterns, or certain times of the day.
- Decades of research demonstrate that particles with a diameter of 2.5 micrometers or less can enter the respiratory tract. Small particles created by burning wood remain airborne for longer periods of time than larger particles, meaning that they remain available for human inhalation. Small particles can have a strongly negative effect on human health, causing and exacerbating lung diseases, triggering cardiovascular events, cancers, and premature deaths. Health loss can occur at air pollution levels well below regulatory standards.
- **Long-term exposure** is associated with reduced lung function, chronic bronchitis, and even premature death.² Long-term exposure to fine particles (PM_{2.5}) is linked to atherosclerosis (a condition that underlies many cardiovascular diseases), adverse birth outcomes, and childhood respiratory diseases. Additional studies suggest that long-term exposure to PM_{2.5} also increases risks of diabetes, neurodevelopmental abnormalities, and diminished cognitive function.³ Lung cancer is also a risk of long-term exposure to wood smoke.⁴



Small particles can have a strongly negative effect on human health, causing and exacerbating lung diseases, triggering cardiovascular events, cancers, and premature deaths. Health loss can occur at air pollution levels well below regulatory standards.

THE HARMFUL EFFECTS OF WOOD SMOKE AND



Outdoor fireplaces can cause dangerous exposures, especially under still, damp conditions and temperature inversions when smoke continues to concentrate near the ground.

- **Short-term exposure** to wood smoke aggravates many types of lung diseases, can cause asthma attacks and acute bronchitis, and may increase susceptibility to respiratory infections.
- Low-level exposure to wood smoke, regardless of its origin, can reduce pulmonary function and lower blood oxygen concentrations. Recent studies show reduced lung function later in life following childhood exposure to wildfire smoke.⁵ Studies also show a higher incidence of breast cancer in women who burn synthetic wood,⁶ and shortened lifespans in women with breast cancer who are exposed to fine particles found in wood smoke.⁷
- Short- and long-term exposures to PM2.5 decrease life expectancy.⁸ A 2017 study of more than 60 million U.S. Medicare beneficiaries found that, for every increase in pollution concentration of 10 $\mu\text{g}/\text{m}^3$ in outdoor PM2.5 (measured as an annual average), mortality increased by 7%. The study included populations from small cities and rural areas. The authors reported that long-term exposure to PM2.5 is associated with an increased risk of death, even at levels below the current regulatory standards.⁹
- The burning of firewood and trash is one of the largest contributors to PM2.5 in many rural, semi-rural, and suburban communities in the U.S.
- Outdoor fireplaces can cause dangerous exposures, especially under still, damp conditions and temperature inversions when smoke continues to concentrate near the ground.
- The history of second-hand cigarette smoke regulation demonstrates that local and state policy efforts are likely to be more successful than federal initiatives. Local and state regulations raised public awareness regarding the health risks of second-hand smoke to non-smokers, increasing support for policy measures to reduce these risks, and changing attitudes and norms regarding the social acceptability of smoking.

THE GROWTH OF RECREATIONAL WOOD BURNING



- Local burn-free zones, especially in densely populated environments, could dramatically reduce pollution, exposures and health risks. Wood burning in most societies is viewed as a natural practice to create heat, light, cook food, heat water, and provide a sense of security. Fireplaces, woodstoves, and both indoor and outdoor cooking appliances are often the center of social life and relaxation.
- Wood burning in residential settings has long enjoyed a positive cultural image in the public mind. This favorable impression was reinforced during recent decades of fossil fuel price increases, and by consumer perception that wood burning is both natural and environmentally sustainable.
- The growing scientific consensus that wood smoke causes serious and widespread human illness is disbelieved by many who rely on wood burning for heat or its social comforts at relatively small costs compared with fossil fuels. They believe they have a legitimate right to continue a traditional and natural practice spanning thousands of years. Customary or traditional patterns of wood burning help to explain constituents' resistance to new regulations, and legislators are especially sensitive to their constituents' concerns.

Wood-burning in most societies is viewed as a natural practice to create heat, light, cook food, heat water, and provide a sense of security. Fireplaces, woodstoves, and both indoor and outdoor cooking appliances are often the center of social life and relaxation.

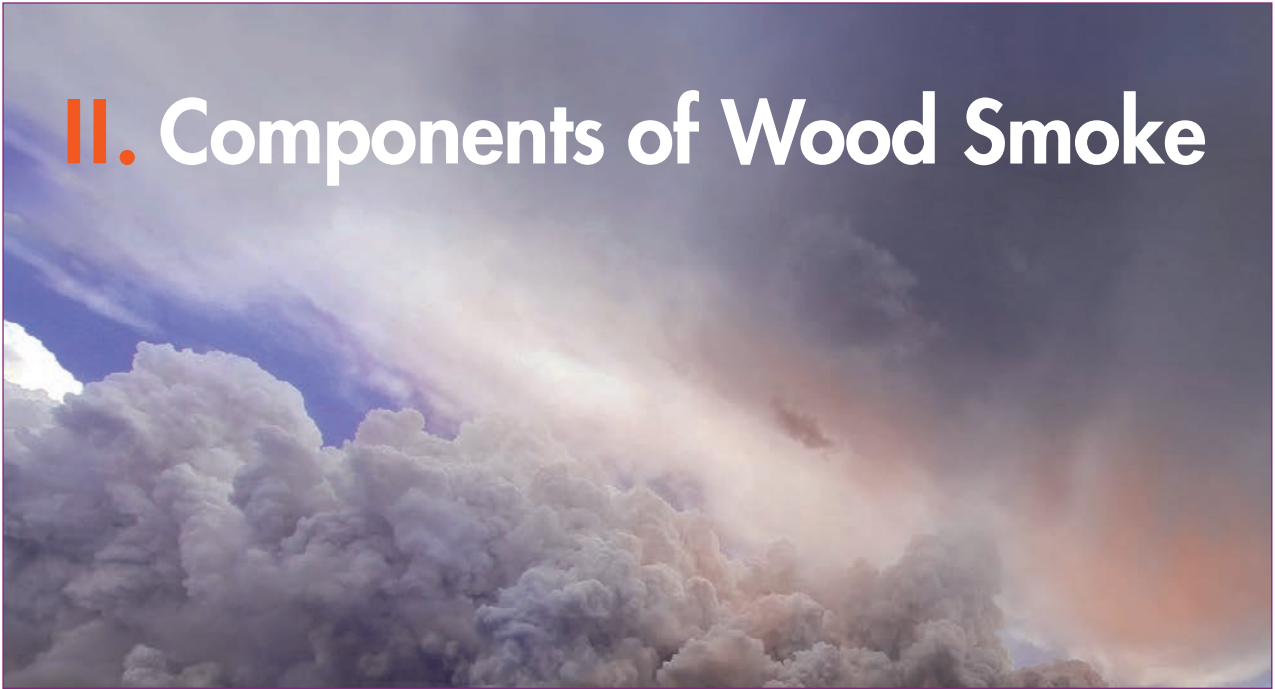
THE HARMFUL EFFECTS OF WOOD SMOKE AND



The report explores efforts in Allegheny County, Pennsylvania,, and in Connecticut to control wood-smoke exposures. It is important to note that Allegheny County has some of the highest levels of particulate air pollution in the U.S.

- This report provides an extensive review of the health effects associated with human exposure to wood smoke. At the present time, there are no accurate estimates of the current number of appliances, frequency of use, or amount of wood burned by geographic location because the data do not exist.
- This report examines state and local government efforts to reduce wood-smoke emissions. As examples, the report explores efforts in Allegheny County, Pennsylvania, and in Connecticut to control wood-smoke exposures. It is important to note that Allegheny County has some of the highest levels of particulate air pollution in the U.S. The report ends with recommendations to reduce exposures from wood-smoke emissions for all levels of government, as well as for individuals.
- The research presented in this report concludes that the health risks associated with wood-smoke exposure are serious. Finally, the report suggests a variety of policy and behavioral changes that could significantly reduce human exposures and health loss from inhaling wood smoke.

II. Components of Wood Smoke



- Wood smoke contains thousands of chemicals, many with documented adverse human health effects. Chemicals include gases such as carbon monoxide (CO), nitrogen dioxide (NO₂), and ozone (O₃). Wood smoke contains particulate matter (PM) and toxic air pollutants, including benzene, formaldehyde, acrolein and polycyclic aromatic hydrocarbons (PAHs).
- The specific chemicals in wood smoke depend on the type of burning appliance, whether wood stove, fireplace, or fire pit. Other factors include the burn rate, type of wood, and moisture content. The appliance used and type of wood burned have the largest effect on the composition of emissions from wood combustion.¹⁰
- Components of wood smoke include at least five chemical groups classified as known human carcinogens by the International Agency for Research on Cancer (IARC). Wood smoke contains additional chemicals categorized by IARC as probable or possible human

Components of wood smoke include at least five chemical groups classified as known human carcinogens by the International Agency for Research on Cancer (IARC). Wood smoke contains additional chemicals categorized by IARC as probable or possible human carcinogens, and at least 26 chemicals listed by the USEPA as hazardous air pollutants.

THE HARMFUL EFFECTS OF WOOD SMOKE AND

carcinogens, and at least 26 chemicals listed by the USEPA as hazardous air pollutants.¹¹

- The chemical composition of wood smoke is extremely complex.¹² Table 1 lists a handful of the chemicals of concern found in wood smoke that have been linked to cardiovascular and pulmonary diseases, immune system disorders, cancer and/or other diseases.

Table 1: Major Hazardous Pollutants in Wood Smoke

Compound	Cardiovascular	Pulmonary	Cancer	Immune	Other
1,3 butadiene*			•		•
PAHs (20+)*			•		
Benzene*			•		•
Acrolein*	•	•	?	•	
Formaldehyde*			•		
Dioxin			•		
Particulate Matter	•	•			

*Hazardous Air Pollutant

Particulate Matter

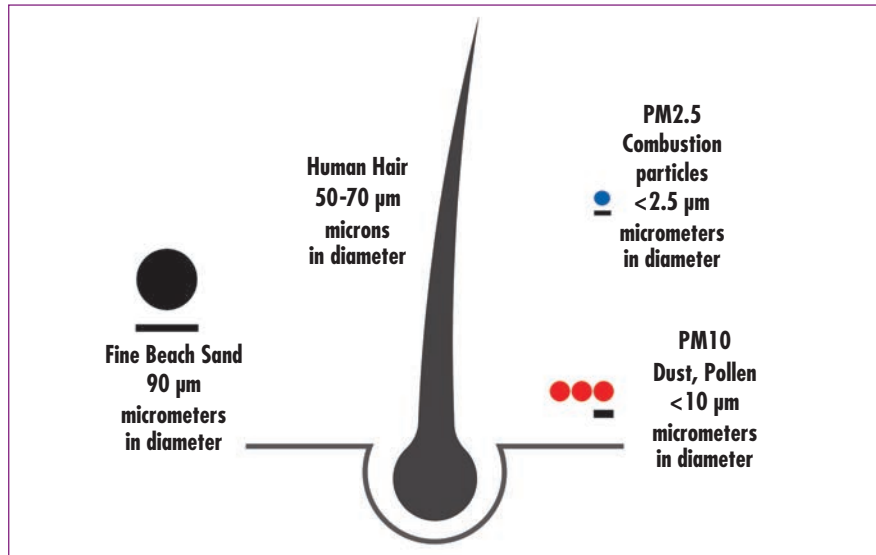
- Particulate matter, or PM, is a mixture of solid and liquid droplets suspended in the air. PM is regulated according to size by the National Ambient Air Quality Standards (NAAQS) set by USEPA.
- PM10 consists of coarse particles smaller than 10 µm in diameter, while PM2.5 is made up of finer particles that are generally 2.5 µm or smaller in diameter. Ultrafine particles, or UFP, are not currently regulated by USEPA and have diameters less than 0.1 µm.

PM2.5

- Fine particles are so small they can pass through the nose and throat and enter the lungs. Once inhaled, these fine particles can cause serious health effects, especially to those with heart or lung

THE GROWTH OF RECREATIONAL WOOD BURNING

Figure 1: PM Size Comparison



Source: <https://www.airnow.gov/index.cfm?action=aqibasics.particle>

diseases. Children, older adults and people with diabetes are also affected by fine particles.

- Researchers at Harvard found that both short- and long-term exposure¹³ to PM2.5 was associated with mortality at levels below current standards.¹⁴

Sources of PM2.5 Pollution

- Burning firewood and trash are among the largest sources of fine particle pollution in many parts of the country.¹⁵ According to USEPA, residential wood smoke contributes more than 345,000 tons of PM2.5 into the air throughout the country each year.¹⁶
- A recent study in the northwest U.S. found that residential wood burning was responsible for 31% of PM2.5 in Seattle; for 58% in Portland; for 86% in Klamath Falls; and for 92.7% in Lakeview, Oregon. At 10 monitoring sites in the study, the average December and January contribution of residential wood burning to PM2.5



Burning firewood and trash are among the largest sources of fine particle pollution in many parts of the country.

THE HARMFUL EFFECTS OF WOOD SMOKE AND



Wood burning emits about four times the amount of PM2.5 than all the region's power plants in Southern California combined.

levels ranged from 11.4% to 92.7%. The highest percentages of wood smoke PM2.5 occurred in smaller towns where there were fewer other sources of PM2.5.¹⁷

- In Connecticut, wood smoke particulate matter has been found to contribute as much as 100% of the hourly and 74% of the daily contribution to the total PM2.5.¹⁸ In Westport, Connecticut, wood heating contributes 69% of PM2.5 in the fall.¹⁹
- A study of five rural Montana valley communities found that residential wood stoves were the largest source of PM2.5, ranging from 56% to 77% of measured wintertime PM2.5 pollution.²⁰
- Wood burning is the largest source of annual PM2.5 pollution in the San Francisco Bay Area, contributing 25% of the area's PM2.5 pollution, followed by exhaust from gasoline vehicles (14%) and diesel vehicles (8%).
- On one street in Atlanta, Georgia, residential wood burning contributes an average of 50% of particulate emissions in winter, compared to an average of 33% for gasoline vehicles. Wood burning emits about four times the amount of PM2.5 as all of the Southern California region's power plants combined.²¹

PM2.5 Federal Regulations

- The Clean Air Act requires USEPA to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment.
- The NAAQS were established for PM2.5 in 1997, based on evidence that fine particle pollution can cause premature deaths, as well as harmful effects on the cardiovascular and respiratory systems. The current primary annual NAAQS for PM2.5 is 12 $\mu\text{g}/\text{m}^3$ and the 24-hour NAAQS is 35 $\mu\text{g}/\text{m}^3$ (see Table 2).²²

THE GROWTH OF RECREATIONAL WOOD BURNING

Table 2: National Ambient Air Quality Standards for PM2.5

Date	Primary/Secondary	Averaging Time	Level $\mu\text{g}/\text{m}^3$	Calculation
1997	Primary and Secondary	24-hour	65	98th percentile, averaged over 3 years
1997	Primary and Secondary	Annual	15	Annual arithmetic mean, averaged over 3 years
2006	Primary and Secondary	24-hour	35	98th percentile, averaged over 3 years
2006	Primary and Secondary	Annual	15	Annual arithmetic mean, averaged over 3 years
2012	Primary	Annual	12	Annual arithmetic mean, averaged over 3 years
2012	Secondary	Annual	15	Annual arithmetic mean, averaged over 3 years
2012	Primary and Secondary	24-hour	35	98th percentile, averaged over 3 years

Note: Primary standards protect public health, including the health of sensitive populations, such as asthmatics, children, and older adults. Secondary standards protect the public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

“Small particulate pollution [has] health impacts even at very low concentrations — indeed no threshold has been identified below which no damage to health is observed.”

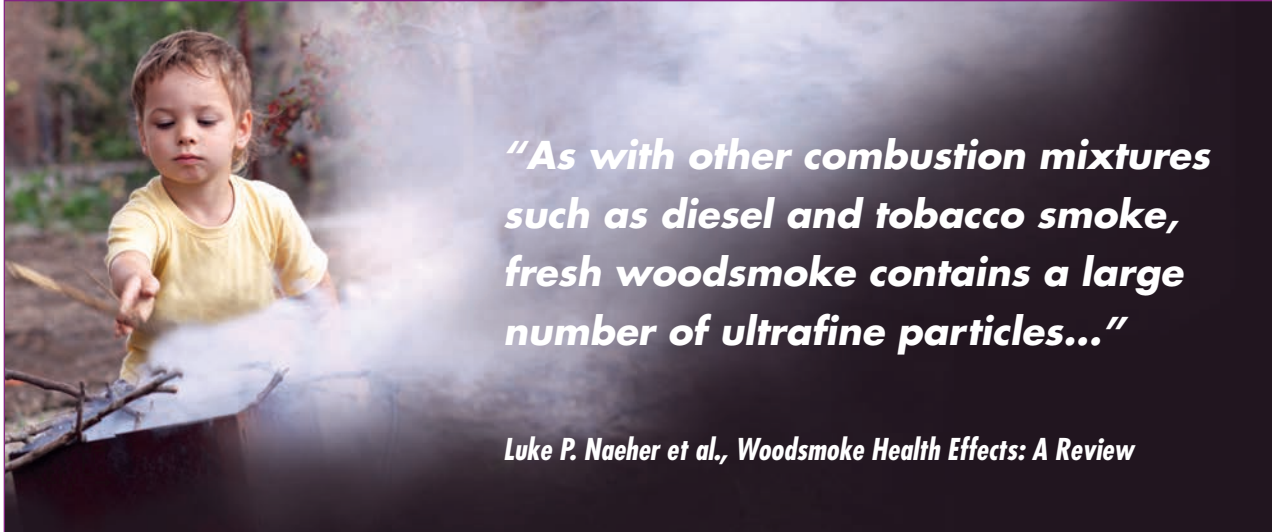
Source: <http://www.who.int/mediacentre/factsheets/fs313/en/>

- Although USEPA has set regulatory standards for PM2.5, recent data suggest that there is no safe level of exposure.²³ A study of over 300,000 people in nine European countries found some lung cancer risk at every level of particulate matter and confirmed that the higher the PM level, the greater the risk. Every increase of five $\mu\text{g}/\text{m}^3$ of PM2.5 drove the risk of lung cancer up by 18%.²⁴

Ultrafine Particles Smaller than PM2.5

- Wood smoke contains ultrafine particles that may be even more dangerous than PM2.5. These ultrafine particles (UFPs) penetrate deep into the respiratory tract, and have not only been detected in the lungs, but also in the liver, kidneys, heart, and brain.²⁵

THE HARMFUL EFFECTS OF WOOD SMOKE AND



“As with other combustion mixtures such as diesel and tobacco smoke, fresh woodsmoke contains a large number of ultrafine particles...”

Luke P. Naeher et al., Woodsmoke Health Effects: A Review

Wood smoke contains ultrafine particles (UFPs) that may be even more dangerous than PM2.5. These particles penetrate deep into the respiratory tract, and have not only been detected in the lungs but also in the liver, kidney, heart, and brain.

- The effects of ultrafine particles on the respiratory system are not well studied,²⁶ but a recent review suggests a causal relationship between short-term exposures to UFPs and cardiovascular and respiratory effects, including changes in lung function and pulmonary inflammation.²⁷
- The ultrafine component of PM might be responsible for many observed health effects of PM2.5 and PM10 for three reasons: (1) their small diameter enables UFPs to penetrate deep into the lungs more easily than larger particles; (2) UFPs are cleared less efficiently from the respiratory tract than larger particles and are transported from the lungs to the bloodstream and into other organ systems; and (3) UFPs have a greater surface area compared to larger particles, thus providing a larger area of potentially toxic chemicals or metals to be absorbed by the lungs and other organs.²⁸
- UFPs are not regulated as criteria pollutants, and are therefore not monitored at most air pollution monitoring stations in the U.S. Without a national network of UFP monitors to assess UFP ambient concentrations in the U.S., little is known about ambient UFP concentrations, and important information is lacking to support health studies.²⁹

Polycyclic Aromatic Hydrocarbons (PAHs)

- PAHs are constituents of fine particles³⁰ produced from incomplete combustion of organic materials. Natural sources of PAHs include wildfires and volcanos, while man-made sources of PAHs sources are smoke, automobile emissions, and cigarette smoke.
- Regions of the country with dense use of wood stoves and fire-places have elevated levels of PAHs in ambient air.³¹ The American Conference of Governmental Industrial Hygienists (ACGIH) has concluded that breathing smoke from open fireplaces is a major route of exposure to PAHs for the general population.³²
- Residential wood burning is the largest source of PAHs in the U.S.³³ Factors that influence emissions of PAHs include the type of wood burned, as well as combustion conditions such as temperature, moisture, availability of oxygen, and completeness of combustion.³⁴
- Higher PAH emissions from wood burning have been found at higher wind speed and lower flaming rate. Smoldering combustion is estimated to emit up to five times more PAHs than flaming combustion.³⁵
- PAHs are regulated as Hazardous Air Pollutants (HAPs), and seven PAHs are classified as probable human carcinogens.³⁶ They are benzo[a]pyrene, benz[a]anthracene, chrysene, benzo[b]-fluoranthene, benzo[k]fluoranthene, dibenz[a,h]anthracene, and indeno[1,2,3-cd]pyrene.
- The carcinogenic effects of PAHs are due to their ability to bind to DNA. Many studies show a correlation between levels of PAH-DNA adduct formation in different organs and PAH doses.³⁷ A DNA adduct is a segment of DNA bound to a cancer-causing chemical. This process could be the start of a cancerous cell, or carcinogenesis.



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THE HARMFUL EFFECTS OF WOOD SMOKE AND



Today, synthetic logs are manufactured from nut shells, fruit pits, coffee grounds, paper, plant oils, and small amounts of various chemicals that may be blended with biowax, a vegetable paraffin, made from soy or palm oil or wood resins. Petroleum-based paraffin wax is still the most common wax used in synthetic logs.

- Several studies report that higher PAH levels and a wider range of specific PAH compounds are found in synthetic log emissions compared to real wood emissions.³⁸
- Higher concentrations of chrysene, a documented tumorigenic PAH, have also been found in synthetic log emissions.³⁹ A study of the organic compounds emitted in smoke from burning pine, oak, and synthetic logs in residential fireplaces in the Los Angeles area showed that the smoke from synthetic logs had the highest total PAH emission rate and the most diverse types of PAHs.⁴⁰
- Manufacturers of synthetic logs claim that their logs emit fewer PAHs than wood. Duraflame[®], the leader in the synthetic log market,⁴¹ says its logs produce “80 percent less emissions than a typical wood fire.”⁴² They cite an 11-year-old study that found lower levels of PM and PAHs in synthetic wood logs.⁴³ The manufacturer of Goodwood All-Wood Firelogs, which are made of wood chips, shavings and sawdust without the use of petroleum or chemical binders, claims that its products emit 25-50% fewer particulates than regular firewood.⁴⁴
- Petroleum-based synthetic logs have been on the market since the 1960s, when Duraflame[®] created a fire log by blending sawdust with petroleum wax. Today, synthetic logs are also manufactured from nut shells, fruit pits, coffee grounds, paper, plant oils, and small amounts of various chemicals that may be blended with biowax, a vegetable paraffin, made from soy or palm oil or wood resins. However, petroleum-based paraffin wax is still the most common wax used in synthetic logs.
- Both the burning of real wood and synthetic logs are sources of PAH exposure. Research published in 2014 showed that women who burn synthetic logs over many years are more likely to have breast cancer than those who do not burn them. The women who burned synthetic logs and developed breast cancer were more likely to have at least two genetic variants. The authors of the

study argue that the increase in breast cancer risk observed with synthetic log burning may be biologically plausible, citing reports documenting higher levels of certain PAHs in synthetic logs.⁴⁵

VOCs and Other Organic Contaminants

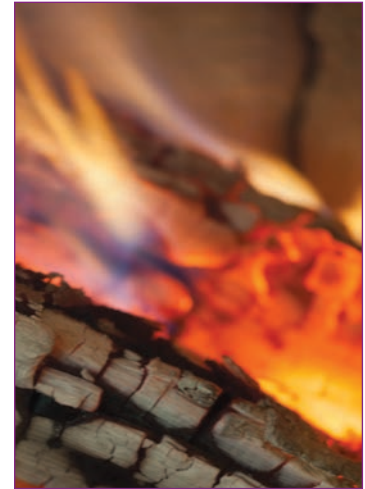
- Wood smoke contains numerous volatile organic compounds (VOCs) and organic contaminants.

1,3-butadiene

- Sources of 1,3-butadiene include industry emissions, cigarette smoke, wood smoke, and the smoke of wood fires. The International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), and the USEPA all classify 1,3-butadiene as a human carcinogen.
- Wood burning has been found to increase personal exposure to 1,3-butadiene, as well as indoor levels of 1,3-butadiene. The type of wood-burning appliance and burning time are significant factors for indoor levels of 1,3-butadiene. The Agency for Toxic Substances and Disease Registry (ATSDR) recommends reducing the risk of exposure to 1,3-butadiene by minimizing the amount of smoke released during wood burning.⁴⁶

Benzene

- Benzene, a major component of wood smoke, is regulated as a hazardous air pollutant. Benzene is a known human carcinogen, classified as Group 1 by the IARC. In occupational settings, long-term inhalation exposure to benzene can cause various disorders in the blood, including reduced numbers of red blood cells and aplastic anemia.
- Reproductive effects have been reported for women exposed to high levels of benzene by inhalation. Adverse effects on the developing fetus have been observed in animal tests.⁴⁷ Domestic wood burning contributes to indoor levels of benzene, especially



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THE HARMFUL EFFECTS OF WOOD SMOKE AND

from inefficient flame combustion.⁴⁸ Hardwood burned in a wood stove emits one gram of benzene per kg of wood burned,⁴⁹ and even higher levels of benzene have been found inside wood-burning homes.⁵⁰ In Klamath Falls, Oregon, wood stoves are estimated to emit eight tons of benzene during the wood-burning season.⁵¹



Formaldehyde is linked to throat, nose, and blood cancers. People with asthma may be more sensitive to exposure to formaldehyde and repeated prolonged exposures have been linked to asthma attacks.

Aldehydes

- Aldehydes in wood smoke include acetaldehyde, a probable carcinogen, formaldehyde, a probable human carcinogen, and acrolein, a lung cancer agent.⁵² Formaldehyde is linked to throat, nose, and blood cancers.⁵³ People with asthma may be more sensitive to exposure to formaldehyde,⁵⁴ and repeated prolonged exposures have been linked to asthma attacks.⁵⁵
- Acrolein damages and inhibits DNA repair in lung cells; it interferes with the immune response in the respiratory tract;⁵⁶ is associated with increased cardiovascular disease;⁵⁷ and it suppresses the immune system.⁵⁸ Acrolein is implicated in demyelinating diseases such as multiple sclerosis.⁵⁹ Demyelinating diseases are diseases of the nervous system in which the myelin sheath of neurons is damaged.

Dioxins

- Dioxins are extremely toxic, mutagenic, and linked to the suppression of the human immune system. Dioxins are persistent, toxic and bio-accumulative chemicals and are transported over long distances from the source of emission. Forest fires, backyard trash burning, and medical waste incinerators are the top three air sources of dioxin emissions in the U.S.⁶⁰
- In the San Francisco Bay region, emissions from woodstoves and fireplaces contribute up to 40% of the dioxins emitted into the air.⁶¹ In Fresno, California, wood burning was shown to be the primary source of dioxins in the environment.⁶² If wood with preservatives is burned in domestic stoves and fires, studies have found a significant increase in dioxin formation.⁶³



III. Health Risks from Wood-Smoke Exposure

- Wood smoke produces fine and ultrafine particulate matter and many different volatile gases. Inhaling fine particles can induce and exacerbate lung diseases including asthma, as well as diseases of the brain and cardiovascular system.
- Fine particle air pollution is often from multiple sources, but in many regions in the U.S., wood burning is the single largest source during colder months.

Fine particle air pollution is often from multiple sources, but in many regions in the U.S., wood burning is the single largest source during colder months.

Lung Diseases

Chronic Obstructive Pulmonary Disease (COPD)

- COPD is a leading cause of illness and mortality worldwide.⁶⁴ While smoking has been associated with risk of COPD since the 1950s,⁶⁵ results from a growing number of published studies demonstrate that risk factors other than smoking are strongly associated with COPD, including both indoor and outdoor pollutants.
- Studies show that COPD is common among those who have never smoked. Worldwide, between 25% and 45% of patients with COPD have never smoked.⁶⁶

THE HARMFUL EFFECTS OF WOOD SMOKE AND



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- Wood-smoke exposure in the U.S. is associated with a risk of developing COPD.⁶⁷ Among women and smokers exposed to wood smoke, the prevalence of COPD is especially high, and the risk of developing the disease is significantly increased.⁶⁸
- The prevalence of COPD in individuals exposed to wood smoke increases significantly as the duration of wood-smoke exposure lengthens. Researchers recently suggested that wood-smoke COPD should be considered a distinct disease.⁶⁹ COPD associated with wood-smoke exposure (W-COPD) differs from COPD associated with tobacco smoking (T-COPD) and is related to obstruction of the airways, rather than emphysema.⁷⁰

Asthma

- Breathing smoke from wood-burning devices can cause asthma attacks and other respiratory illnesses.⁷¹ The Centers for Disease Control and Prevention (CDC) estimate that 24 million people (8%) in the U.S. have asthma.⁷² It is one of the most prevalent chronic diseases among children worldwide.⁷³
- Fine particulate matter is a risk factor for worsened asthma⁷⁴ and has been associated with higher morbidity and mortality in patients

Figure 2: Asthma Triggers

Smoke Triggers Asthma

According to the American Lung Association, exposure to any type of smoke – cigarette, cigar, secondhand smoke, wood, coal, leaf burning, and/or kitchen smoke can all irritate the lungs.



with asthma.⁷⁵ Wood smoke, in particular, exacerbates asthma symptoms with higher rates of asthma in areas where wood burning takes place over a sustained period.⁷⁶

- A study of children with mild asthma reported associations between measures of airway inflammation and decreased lung function with measures of increased wood-smoke exposure.⁷⁷ Exposure to particulate matter (PM) increases the risk of developing asthma, and even low levels of PM_{2.5} exposure increase asthma symptoms.
- A large nationwide study found an association between air pollution and an increased risk of asthma symptoms in non-asthmatic women and an association with asthma development in women.⁷⁸ Also found was an association between air pollution and the development of asthma in that group.⁷⁹
- Physicians managing asthma recognize that exposure to wood smoke, indoors or outdoors, can narrow airways and cause asthma to flare up, but many patients are unaware of the relationship between wood smoke and asthma. Asthma experts consider smoke from campfires to be among the “surprising” allergy triggers.⁸⁰

A large nationwide study found an association between air pollution and an increased risk of asthma symptoms in non-asthmatic women. Also found was an association between air pollution and the development of asthma in that group.

THE HARMFUL EFFECTS OF WOOD SMOKE AND



Reducing exposure to fine particle pollution has been shown to be associated with decreases in cardiovascular mortality, yet over 90% of patients with cardiovascular disease are not informed of health risks related to fine particle pollution.

Heart Diseases

- Cardiovascular disease accounts for the greatest number of deaths in the U.S. One in three Americans has heart or blood vessel disease.
- Both short-term and long-term exposures to increased concentrations of fine particle pollution increase the risk of cardiovascular mortality and decrease life expectancy.
- Reducing exposure to fine particle pollution has been shown to be associated with decreases in cardiovascular mortality, yet over 90% of patients with cardiovascular disease are not informed of health risks related to fine particle pollution.
- For a person with cardiovascular disease, exposure to unhealthy levels of particle pollution can cause serious problems, including heart attacks, in a short period of time.⁸¹ Exposure to fine and ultrafine combustion-derived PM is well-recognized as a risk factor for cardiovascular disease.⁸²

Table 3: Fine Particles and Cardiovascular Health Effects

Cardiovascular mortality
Ischemic stroke
Acute coronary syndrome
Exacerbation of heart failure
Increased ventricular arrhythmias
Systemic blood pressure elevation

Source: USEPA. <https://www.epa.gov/particle-pollution-and-your-patients-health/course-outlinekey-points>

- Burning wood smoke produces fine particles and increases the risk for heart attacks, strokes, heart disease, and congestive heart failure.⁸³ Numerous epidemiologic and observational studies document effects of fine particles on the cardiovascular system in populations.⁸⁴
- The American Heart Association warns that even very short-term exposure to PM2.5 (a few hours to weeks) can trigger cardiovascular disease–related mortality and nonfatal events (e.g., heart attacks, heart failure, arrhythmias, and strokes).⁸⁵
- Research on populations exposed to wildfire smoke suggests that PM2.5 may act as a triggering factor for acute coronary events during wildfire episodes.⁸⁶
- Studies from across the world have consistently shown that long-term exposures to fine PM are associated with myocardial ischemia and infarctions, heart failure, arrhythmias, strokes and increased cardiovascular mortality.⁸⁷
- A 2017 study of over 60,000 residents in Hong Kong adds to the evidence base that long-term residential PM2.5 exposure increases the risk of stroke in older people.⁸⁸



Research on populations exposed to wildfire smoke suggests that PM2.5 may act as a triggering factor for acute coronary events during wildfire episodes.

THE HARMFUL EFFECTS OF WOOD SMOKE AND



According to the EPA's most recent National Air Toxics Assessment, residential wood heating accounted for 50% of all "area source" air toxic cancer risks nationwide in 2011.

Cancer

- According to the EPA's most recent National Air Toxics Assessment, residential wood heating accounted for 50% of all "area source" air toxic cancer risks nationwide in 2011. That means that the air toxics from residential wood heating accounted for as much cancer risk as all the other smaller sources that often exist in multiple sites in a community, like gas stations and dry cleaners.⁸⁹
- Cancer classifications by the International Agency for Research on Cancer (IARC) demonstrate the potential for exposure to wood smoke to cause cancer: indoor emissions from household combustion of wood are *probably carcinogenic to humans* (Group 2A);⁹⁰ outdoor air pollution is carcinogenic to humans (Group 1); and PM pollution is carcinogenic to humans (Group 1) and causes lung cancer, with the risk of lung cancer increasing with increased levels of exposure to PM and air pollution.⁹¹

Table 4: IARC Cancer Classifications

Group 1	Carcinogenic to humans
Group 2A	Probably carcinogenic to humans
Group 2B	Possibly carcinogenic to humans
Group 3	Not classifiable as to its carcinogenicity to humans
Group 4	Probably not carcinogenic to humans

Source: <http://monographs.iarc.fr/ENG/Classification/>

- The cancer-causing potential of several polycyclic aromatic hydrocarbons (s) in wood smoke warrant further concern. Benzo[a]pyrene (Group 1), Benz[a]anthracene (Group 2A), and dibenz[a,h]anthracene (Group 2A) are some of the most potent carcinogens detected in wood smoke. Five other PAHs found in wood smoke are also possibly carcinogenic to humans (Group 2B).⁹²

THE GROWTH OF RECREATIONAL WOOD BURNING

- Wood burning is the largest source of PAHs in the U.S.,⁹³ and has been shown to be the top contributor to the air's mutagenicity (likely to cause mutations in DNA, including cancer).
- Levels of B(a)P and several other PAHs are significantly higher (three- to five-fold) in homes with wood combustion appliances compared to homes without them.⁹⁴
- Carcinogenic PAHs have been detected at significant concentrations in a residential neighborhood where wood is burned, contributing 49% of the total PAHs in ambient air.⁹⁵
- Two other IARC Group 1 human carcinogens, 1,3-butadiene and benzene, are detected in wood smoke. Residential wood combustion has been shown to increase personal exposure to 1,3-butadiene as well as indoor levels of 1,3-butadiene and benzene.⁹⁶
- Arsenic, another possible component in wood smoke, is also classified as a Group 1 carcinogen.⁹⁷ Burning wood treated with chromated copper arsenate (CCA) in fireplaces, woodstoves, or trash releases arsenic in smoke and ash.⁹⁸
- In the 1980s, arsenic in wood smoke was found to be the cause of neurological and medical illness in a family of eight people living in rural Wisconsin,⁹⁹ and it has been measured in wood smoke in the ambient air in Seattle.¹⁰⁰
- Open burning of CCA-treated wood has been found to emit the more toxic trivalent form of arsenic in particle sizes that are most respirable.¹⁰¹ CCA was used to protect wood from rot and insects in many residential wood structures for decades, until pressure-treated lumber for most residential uses was phased out at the end of 2003.



Carcinogenic PAHs have been detected at significant concentrations in a residential neighborhood where wood is burned, contributing 49% of the total PAHs in ambient air.



An analysis of seven epidemiologic studies concluded that predominant wood users in North American and European countries experienced higher risk of lung cancer.

Lung Cancer

- Lung cancer is the most common form of cancer in the world and is the number one cancer killer of both men and women in the U.S. Although most lung cancer occurs in smokers, 25% of worldwide lung cancer occurs in those who never smoked.¹⁰²
- Recent studies show increasing rates of lung cancer in people who have never smoked, mostly in females.¹⁰³ There are wide-ranging geographic incidence and risk factors among this group, including asbestos, air pollution, radon, arsenic compounds, cadmium, chromium, ionizing radiation, and wood-smoke exposure.¹⁰⁴
- An association between outdoor air pollution and lung cancer has been suspected for more than a half century. In 2013, IARC classified outdoor air pollution and the PM component of outdoor air pollution as Group 1 carcinogens, based on consistent evidence of an association between the long-term average concentration of PM_{2.5} in outdoor air and lung cancer incidence or mortality.¹⁰⁵ IARC reported that the risk of lung cancer increases as the particle levels rise.¹⁰⁶
- Wood-smoke exposure is considered a risk factor for the development of lung cancer.¹⁰⁷ For decades, studies have found increases in the risk of lung cancer in women who burn wood inside their homes, mostly in poor rural areas,¹⁰⁸ with cancer linked to wood-smoke exposure.¹⁰⁹
- More recently, an analysis of seven epidemiologic studies concluded that predominant wood users in North American and European countries experienced higher risk of lung cancer.¹¹⁰
- Other residues in wood are known to cause lung cancer. Wood dust is a human carcinogen and a risk factor for lung cancer;¹¹¹ wood byproducts such as benzene, 1-butadiene, formaldehyde and acetaldehyde, are well-known carcinogens;¹¹² wood smoke contains PAHs; and the most significant health effect from inhalation exposure to PAHs is an excess risk of lung cancer.¹¹³



Breast Cancer

- A recent and growing body of evidence suggests that exposure to fine and ultrafine particles may be linked to breast cancer. Hundreds of papers support the link between exposures to environmental contaminants and the increasingly high incidence of breast cancer.
- Polycyclic aromatic hydrocarbons (PAHs) are included in a list of a wide variety of toxicants that can lead to increased risk for development of breast cancer. Wood smoke contains PAHs, which have been shown to increase risk for breast cancer through a variety of mechanisms. PAHs have been found to increase breast cancer risk in epidemiological studies.¹¹⁴
- Women are exposed to PAHs from multiple sources, including cigarette smoke, diet, and indoor and outdoor air pollution, but residential wood burning is the most significant source of PAHs in many areas of the world, including the U.S.¹¹⁵
- Like other environmental chemicals associated with breast cancer risk, PAHs are lipophilic and are stored in breast fat tissue.¹¹⁶

A recent and growing body of evidence suggests that exposure to fine and ultrafine particles may be linked to breast cancer. Hundreds of papers support the link between exposures to environmental contaminants and the increasingly high incidence of breast cancer.



The Long Island Breast Cancer Study Project

The Long Island Breast Cancer Study began in 1993, with funding provided by the National Cancer Institute and the National Institute of Environmental Health Sciences (NIEHS). The finding of an association between environmental exposures (including exposure to PAHs) and an increased risk of breast cancer require additional population studies for confirmation.

Decades of epidemiological research suggest that PAHs are linked to breast cancer risk. Like other environmental chemicals associated with breast cancer risk, PAHs are lipophilic and are stored in breast fat tissue.

PAHs can also bind to DNA in breast tissue.¹¹⁷ DNA adducts result when segments of DNA bind to cancer-causing chemicals. PAH-DNA adducts have been associated with breast cancer incidence.¹¹⁸

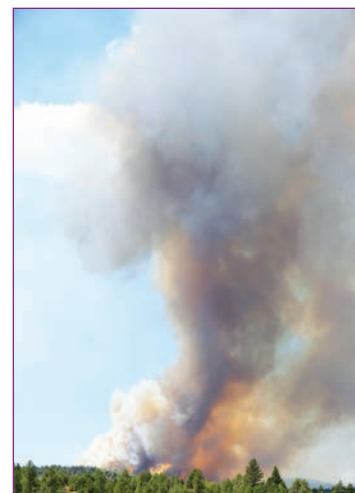
- The use of an open fireplace has been associated with higher DNA adduct levels,¹¹⁹ which have been related to breast carcinogenesis.¹²⁰ Benzo[a]pyrene (BaP) has been shown to cause breast cancer in rodents,¹²¹ and cumulative BaP contributes to breast cancer metastasis.¹²² The main source of atmospheric BaP in some areas, including the Great Lakes Region, is residential wood burning.¹²³
- Decades of epidemiological research suggest that PAHs are linked to breast cancer risk.¹²⁴ Two recent studies suggest that some types of wood burning may increase this risk.
- Women in the Long Island Breast Cancer Study Project who burned synthetic logs instead of real wood logs in their woodstoves or fireplaces, were more likely to have breast cancer than those who did not burn synthetic logs.

THE GROWTH OF RECREATIONAL WOOD BURNING

- Most affected were women who burned synthetic logs in their home for more than seven years and those with genetic variations that may make them more susceptible to PAHs.¹²⁵ Women with the highest level of PAH-DNA adducts had a 50% increased risk of breast cancer.¹²⁶
- The NIEHS Sister Study recruited more than 50,000 women across the continental U.S. and Puerto Rico who were between the ages of 35 and 74, and whose sister had breast cancer. Women in the Sister Study who had a wood-burning stove/fireplace in their longest adult residence had a slightly increased breast cancer risk.
- Women who used an indoor wood-burning stove/fireplace at least once a week had a greater risk of breast cancer than those who did not have a wood-burning stove/fireplace.¹²⁷
- Several studies warn that exposure to high levels of particulate matter (PM) may have deleterious effects on the length of survival among females with breast cancer. Studies have shown that residential wood smoke is a significant contributor to PM emissions.
- One study focused on survival among women with breast cancer in the U.S. Women with breast cancer who lived in areas with higher levels of atmospheric particulate matter were shown to have significantly shorter length of survival than those living in areas with lower exposures. The results of the study suggest that exposure to higher PM levels was associated with early mortality among female breast cancer cases.¹²⁸
- In several other countries, particularly Japan, PM_{2.5} levels have been significantly associated with mortality for women with breast cancer.¹²⁹

Stomach and Intestinal Cancer from Smoked Foods

- The World Cancer Research Fund/American Institute for Cancer Research recommends limiting the consumption of smoked meat.¹³⁰



Several studies warn that exposure to high levels of particulate matter (PM) may have deleterious effects on the length of survival among females with breast cancer.

Figure 3: Cancer Risks Associated with Smoked Foods

Smoked Foods: Cancer Risks

Wood-smoked foods contain a large number of PAHs. For more on high levels of PAHs in traditional smoked salmon in Alaska, see <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3567306/figure/F1/>



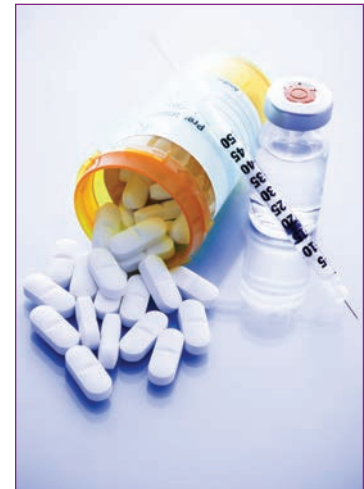
During grilling and smoking, PAHs form when fat and juices from the meat drip into the wood fire, creating flames and smoke that adhere to the surface of the meat. Wood-smoked foods contain a large number of PAHs.

- Decades of epidemiological studies link the consumption of smoked foods with various cancers. Recent studies suggest that grilled, barbecued, and smoked meat intake may also be associated with breast cancer incidence.¹³¹
- A 2017 study funded by the National Cancer Institute involving 1500 women found that smoked meat may increase mortality after breast cancer is diagnosed. The study, the first to examine the associations between smoked meat and mortality after breast cancer, concluded, “a link between dietary sources of PAH and breast cancer prognosis is biologically plausible and epidemiologically consistent.”¹³²
- Grilled and smoked meat intake is a source of PAHs, including benzo[a]pyrene, chrysene, and fluoranthene.¹³³ During grilling and smoking, PAHs form when fat and juices from the meat drip into the wood fire, creating flames and smoke that adhere to the surface of the meat.¹³⁴ Wood-smoked foods contain a large number of PAHs.¹³⁵

- Levels of carcinogenic PAHs in traditionally smoked salmon over burning wood in teepees in Alaska were up to 430 times higher than those measured in commercial products.¹³⁶

Diabetes

- Growing evidence suggests that type 2 diabetes has an autoimmune component¹³⁷ and that diabetics are particularly vulnerable to the acute effects of particle air pollution.¹³⁸
- A study found that exposure to PM_{2.5} increased blood glucose and induced inflammation and insulin resistance in animals, providing a potential biological explanation for a link between PM and diabetes.¹³⁹
- A recent literature review of over 20 studies concluded that exposure to air pollutants (including PM) was significantly associated with insulin resistance and increased incidence of type 2 diabetes.¹⁴⁰



Growing evidence suggests that type 2 diabetes has an autoimmune component and that diabetics are particularly vulnerable to the acute effects of particle air pollution.

Table 5: Facts about Diabetes in the United States

30.3 million people have diabetes (9.4% of the U.S. population)

Diagnosed – 23.1 million people

Undiagnosed – 7.2 million (23.8% of people with diabetes)

Source: National Diabetes Statistics Report, 2017 Estimates of Diabetes and Its Burden in the United States

- In the last five years, dozens of studies have reported a positive association between long-term exposure to ambient PM and risk for type 2 diabetes.¹⁴¹
- A recent study in China is the largest yet to explore the association between long-term PM_{2.5} exposure and type 2 diabetes. It showed that long-term exposure to PM_{2.5} was positively associated with significant increases in diabetes prevalence.¹⁴²



The central nervous system is sensitive to chemicals in wood smoke. Fine particle air pollution can enter the brain via the circulatory system, carrying a number of toxic molecules that contribute to central nervous system diseases.

Central Nervous System Effects and Cognitive Decline

- The central nervous system is sensitive to chemicals in wood smoke. Fine particle air pollution can enter the brain via the circulatory system, carrying a number of toxic molecules that contribute to central nervous system diseases.¹⁴³
- Deficits in learning and memory, as well as in attention-related behaviors, have been reported in both children and adults exposed to particle air pollution.¹⁴⁴
- Exposure to particle pollution also has been associated with decreased cognitive function in older men,¹⁴⁵ accelerated cognitive decline in older women,¹⁴⁶ and Parkinson's disease hospitalizations among Medicare enrollees.¹⁴⁷ Even short-term exposure to air pollution (including PM_{2.5}) increased the progression of Parkinson's disease in humans.¹⁴⁸
- In 2016, a large study found statistically significant associations between long-term PM_{2.5} exposures and dementia, Alzheimer's and Parkinson's disease in Northeastern U.S. cities.¹⁴⁹
- In 2017, another study found that living where PM_{2.5} exceeded EPA's standard increased risks for cognitive decline and dementia in older women by 81% and 92%, respectively. The study included thousands of 65- to 79-year-old healthy women from 48 states. The adverse effects were stronger in women who had a genetic variation that increases the risk for Alzheimer's disease.¹⁵⁰

Mortality

- Ambient PM_{2.5} was the fifth-highest ranking global cause of death in 2015.¹⁵¹ Associations between PM_{2.5} and increased mortality have been found in both healthy and ill people.¹⁵²

- In the U.S., both short-term and long-term exposure to low levels of PM_{2.5} increase mortality in older people. A 2016 New England study found that people over 65 had a higher risk of premature death from short and long-term exposure to PM_{2.5} pollution.
- During the New England 2016 study, the USEPA daily standard for PM_{2.5} was almost never exceeded, demonstrating that air pollution standards in the U.S. do not protect human health.¹⁵³

Toxicity of Wood Smoke

- The toxicity of emissions from wood burning depends on wood type, combustion appliance, and specific combustion conditions such as wood moisture content and burn temperatures.¹⁵⁴
- Incomplete combustion produces more toxic chemicals and carbon particles than higher temperature fires.¹⁵⁵ When combustion is less complete, the PM contains more black carbon and volatile organic compounds, or gases.¹⁵⁶ PM derived from low-temperature combustion conditions has been shown to be more toxic to cells than PM derived from higher temperature burns.¹⁵⁷
- While PAH emission levels in slow-burning conditions are generally higher than those in fast-burning conditions,¹⁵⁸ substantially *higher PAH emissions* have been found during air-starved combustion in both wood and pellet stoves.¹⁵⁹
- A comparison of emissions from a wood and a pellet stove found that the highest total organic PM emissions occurred when an additional wood log was placed on glowing embers during low-temperature burns.¹⁶⁰

Wood Smoke vs. Other Combustion Sources

- Emissions from burning wood have many of the same physical and chemical characteristics as other combustion sources.



During the New England 2016 study, the US EPA daily standard for PM_{2.5} was almost never exceeded, demonstrating that the air pollution standards in the U.S. do not protect human health.

However, unlike sources of fossil fuel that burn under controlled conditions, wood burns differently under different conditions, including the type of wood, how long the wood has dried, and the water content of the wood. In addition, wood is burned in a wide variety of appliances and for varying periods of time.¹⁶¹



Health effects of ambient PM exposure from residential wood combustion can be assumed to resemble those of open biomass burning—including forest, brush and peat fires — because of the similar fuels.

Wildfire Smoke Exposures

“Health effects of ambient PM exposure from residential wood combustion can be assumed to resemble those of open biomass burning — including forest, brush and peat fires — because of the similar fuels.”

Source: WHO. Residential heating with wood and coal: health impacts and policy options. 2015.

- Wildfires are the leading source of formaldehyde and acrolein emissions in the U.S.¹⁶² Nationwide, formaldehyde is one of the top three key pollutants in the air that contribute most to overall cancer risks (the others are benzene and acetaldehyde).¹⁶³
- Studies of populations exposed to wildfire smoke have found that those with respiratory or cardiovascular diseases, as well as older adults and children, may experience more severe short-term and chronic symptoms from wood-smoke exposure.
- Children are particularly sensitive to wood smoke because their lungs are still developing. This makes them more susceptible to the loss of pulmonary function than adults are.
- Adolescent monkeys exposed during the first three months of their lives to a prolonged period of smoke from California wildfires experienced significant immune and respiratory changes, as well as reduced lung function.¹⁶⁴
- These findings are consistent with those of multiple studies that link long-term childhood exposure to air pollution with deficits

in lung function in children.¹⁶⁵ In addition to respiratory problems, researchers found lower birth weight for babies following wildfires in California¹⁶⁶ and the Brazilian Amazon.¹⁶⁷

- Data from areas where wildfires have occurred show large increases in cardiovascular and respiratory illnesses and higher mortality rates. A recent review of over 50 epidemiological studies links wildfire smoke exposures to increased overall mortality rates.¹⁶⁸
- In 2015, agricultural fires in Southeast Asia resulted in more than 100,000 adult deaths across Indonesia, Malaysia, and Singapore brought on by breathing high levels of PM2.5.¹⁶⁹
- Multiple studies confirm a relationship between wildfire exposure and increased physician visits,¹⁷⁰ emergency department visits,¹⁷¹ and hospitalizations for asthma and COPD.¹⁷²

Cigarette Smoke Inhalation, Both Active and Involuntary

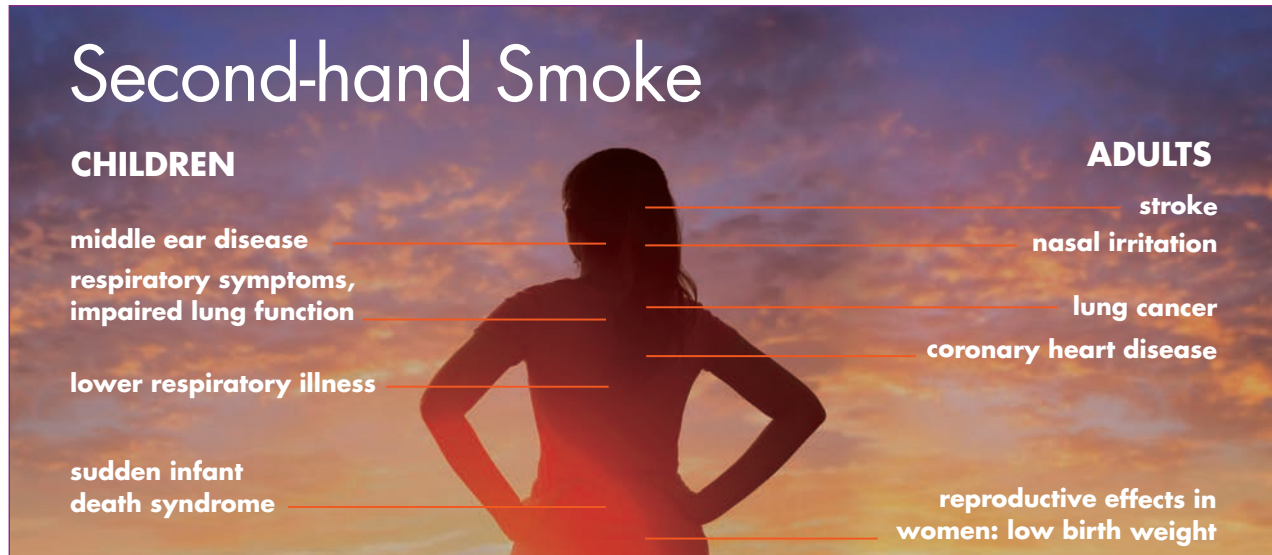
- There are about 600 ingredients in cigarettes. When burned, they create over 7,000 chemicals. At least 69 of these chemicals are known to cause cancer.¹⁷³ Wood smoke contains many of the same toxic and carcinogenic substances as cigarette smoke.
- Chemical components in tobacco smoke with the greatest potential for toxic effects are 1,3-butadiene, acrolein, acetaldehyde and PAHs.¹⁷⁴ These chemicals are also components of wood smoke. However, burning wood generates substantially higher concentrations of many hazardous molecules when compared with burning cigarettes.¹⁷⁵
- Like second-hand cigarette smoke, wood smoke causes numerous health problems in infants and children, including more frequent and severe asthma attacks, respiratory infections, ear infections, and sudden infant death.¹⁷⁶



Data from areas where wildfires have occurred show large increases in cardiovascular and respiratory illnesses and higher mortality rates. A recent review of over 50 epidemiological studies links wildfire smoke exposures to increased overall mortality rates.

THE HARMFUL EFFECTS OF WOOD SMOKE AND

Figure 4: Health Effects Linked to Second-hand Smoke Exposure



Source: CDC, https://www.cdc.gov/tobacco/data_statistics/fact_sheets/secondhand_smoke/health_effects/

The U.S. Centers for Disease Control and Prevention (CDC) has concluded that there is no risk-free level of exposure to second-hand smoke. Likewise, there is no risk-free level of exposure to particulate matter in wood smoke.

- Short-term exposure to PM can compromise the lung's immune defense against infectious agents, increasing susceptibility to infectious disease.¹⁷⁷ With the exception of sudden infant death, all of the health effects in Figure 4 are associated with exposure to chemicals in wood smoke.
- In an affluent region in Western Europe, where infant mortality is low, days with higher PM air pollution are associated with increased infant mortality.¹⁷⁸
- The U.S. Centers for Disease Control and Prevention (CDC) has concluded that there is no risk-free level of exposure to second-hand smoke. Likewise, there is no risk-free level of exposure to particulate matter in wood smoke.
- Thus, breathing any smoke creates a threat to health, and the most vulnerable are susceptible to worsening health following even low-level exposures.

THE GROWTH OF RECREATIONAL WOOD BURNING



Vehicle Emissions

- Wood smoke has higher concentrations of polyaromatic hydrocarbons (PAHs) than found in vehicle exhaust. This leads some researchers to conclude that wood smoke has “a higher mutagenic and carcinogenic potential” than does traffic exhaust.^{179, 180}
- Exhaust from vehicles contains numerous dangerous chemicals, many of which are also found in wood smoke. Known human carcinogens in wood smoke include PAHs, benzene, and formaldehyde, among others.
- The International Agency for Research on Cancer (IARC) has classified both wood smoke and diesel exhaust as carcinogens. Their chemical composition is similar.
- Like wood smoke, diesel exhaust is the result of incomplete combustion. The gaseous fraction of both contain volatile organics, formaldehyde and other aldehydes, 1,3-butadiene, and

The International Agency for Research on Cancer (IARC) has classified both wood smoke and diesel exhaust as carcinogens. Their chemical composition is similar.

Wood smoke particulate matter generates more DNA damage than traffic-generated particulate matter per unit mass in human cell lines.

PH Danielson, et al. Oxidative stress, DNA damage, and inflammation induced by ambient air and wood smoke particulate matter in human A549 and THP-1 cell lines



Source: <https://woodsmokepollution.org/toxins.html>

The smallest particles in wood smoke have the ability to penetrate into the smallest airways of the lungs. Both diesel exhaust and wood smoke are an important source of small fine and ultrafine particles that are the most detrimental to cardiovascular health.

- Diesel exhaust releases particles at a greater rate than gasoline-fueled vehicles, on an equivalent fuel energy basis. Exposure to diesel exhaust has been associated with an increased risk of lung cancer in both human and animal studies.¹⁸¹ Almost all of the diesel particle mass is PM10 or less, and about 95% percent of these particles are less than 2.5 microns in diameter.¹⁸²
- The smallest particles in wood smoke have the ability to penetrate into the smallest airways of the lungs. Both diesel exhaust and wood smoke are an important source of small fine and ultrafine particles that are the most detrimental to cardiovascular health.¹⁸³

Coal Burning

- Wood smoke contains many of the same chemicals as the emissions from coal burning. Both are major sources of ambient air pollution. The dangers of heating homes with coal were gradually recognized over centuries, and the 1952 Great Smog of London caused by household coal burning resulted in major policy responses to coal burning.¹⁸⁴

THE GROWTH OF RECREATIONAL WOOD BURNING

- Wood burning has not received the same attention as coal, although it is also a major source of ambient air pollution in nearly all parts of the world where wood is available.
- WHO reports that 3.7 million premature deaths from exposure to ambient particulate air pollution occurred in 2012, including 94,000 in Canada and the U.S. The use of burning wood for heating homes is a contributor to outdoor air pollution.¹⁸⁵

Table 6: Pollutants in Wood Smoke, Tobacco Smoke, and Diesel and Coal Emissions

Pollutant	Wood Smoke	Tobacco Smoke	Diesel Emissions	Coal Emissions
Carcinogens				
Benzene*	•	?	•	•
Dioxin*	•	•	•	?
1,3-butadiene*	•	•	•	•
Formaldehyde**	•	•	•	•
Lead**	•	?	?	•
PAHs***	•	•	•	•
Green House Gases				
Carbon Dioxide	•	•	•	•
Methane	?	?	•	•
Nitrogen Oxides	•	•	•	•
Other				
Acrolein	•	•	•	•
Acetaldehyde	•	•	•	•
Carbon Monoxide	?	?	•	•
PM2.5	•	•	•	•

*Known human carcinogen **Probable human carcinogen ***There are over 100 different PAHs; seven PAHs are probable human carcinogens



Wood burning has not received the same attention as coal, although it is also a major source of ambient air pollution in nearly all parts of the world where wood is available.



Compared to adults, children inhale a relatively larger amount of air pollutants because of their smaller body size, and they inhale at a higher respiratory rate than adults.

Populations at Greatest Risk

Pregnant Women, Infants, and Young Children

- Over three million children in the U.S. are estimated to live in homes with lower air quality from wood smoke.¹⁸⁶ Young children are especially sensitive to the chemicals emitted from wood smoke.¹⁸⁷
- Compared to adults, children inhale a relatively larger amount of air pollutants because of their smaller body size, and they inhale at a higher respiratory rate than adults.¹⁸⁸
- Exposure to PM affects lung development, including reversible deficits in lung function, chronically reduced lung growth rate, and deficits in long-term lung function.¹⁸⁹
- A significant increased risk of low birth rate and preterm birth have been found in studies on maternal PM_{2.5} exposure.¹⁹⁰ Lower birth weights for babies occurred following wildfires in Southern California¹⁹¹ and agricultural burning in the Amazon.¹⁹²
- Pediatricians are raising awareness of the environmental health risks of wood smoke for children in developed countries. Community wood-smoke exposure is consistently associated with adverse pediatric respiratory health, according to a 2017 review of 36 studies in developed countries. The research focused on respiratory outcomes, but not cardiovascular or neurocognitive health.¹⁹³
- Living in a smoky neighborhood has been associated with emergency department visits in the first three years of life.¹⁹⁴ Ambient exposure to wood smoke during childhood has been associated with bronchitis,¹⁹⁵ ear infections in infants,¹⁹⁶ and reduced lung function in children ages 6-13 years old.¹⁹⁷

Older Adults and Those with Lung and Heart Diseases and Diabetes

- Wood smoke produces fine particles and increases the risk for heart attacks, strokes, heart disease, and congestive heart failure.¹⁹⁸ About half of Americans (47%) have risk factors for heart disease.¹⁹⁹ People with diabetes are more likely to have underlying cardiovascular disease, though they might not know it. Diabetics are particularly vulnerable to the acute effects of particle air pollution.²⁰⁰
- Breathing in wood smoke can exacerbate Chronic Obstructive Pulmonary Disease (COPD) and worsen lung diseases. The CDC estimates that 15 million people in the U.S. have been diagnosed with COPD, and many more likely have COPD but are not aware of it.²⁰¹ About one in 10 children and one in 12 adults in the U.S. has asthma, and the numbers are increasing every year.²⁰²
- The percentage of Americans ages 65 and older is large and growing. By 2060, the 65-and-older age group's share of the total population will rise to nearly 24% from 15%.²⁰³ In 2015, nearly 30% of adults 65+ on Medicare were treated for ischemic heart disease and 11% were treated for COPD.²⁰⁴

Women with Breast Cancer

- Wood smoke contains PAHS, shown to both increase the risk for breast cancer²⁰⁵ and to be associated with mortality for women with breast cancer. Women with breast cancer living in the U.S. in areas with higher levels of PM have been shown to have significant shorter survival rates than those living in areas with lower exposures.²⁰⁶ In several other countries, PM2.5 levels have been significantly associated with mortality in women with breast cancer.²⁰⁷
- Breast cancer is the most common cancer diagnosed among U.S. women, excluding skin cancers. Breast cancer is the second leading cause of cancer death among women, exceeded only by lung cancer. Women living in the U.S. have a one in eight lifetime risk of being diagnosed with breast cancer.²⁰⁸



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THE HARMFUL EFFECTS OF WOOD SMOKE AND



Source: <https://woodsmokepollution.org/wood-smoke-is-pm.html>

The USEPA reports that an estimated 70% of smoke from a chimney can actually re-enter that home or a neighbor's home. A 2014 California study found that a home provides little shielding from outdoor wood smoke. The study showed that 78% of black carbon particles from the outside smoke ended up inside neighboring homes.

Wood-Burning Neighborhoods

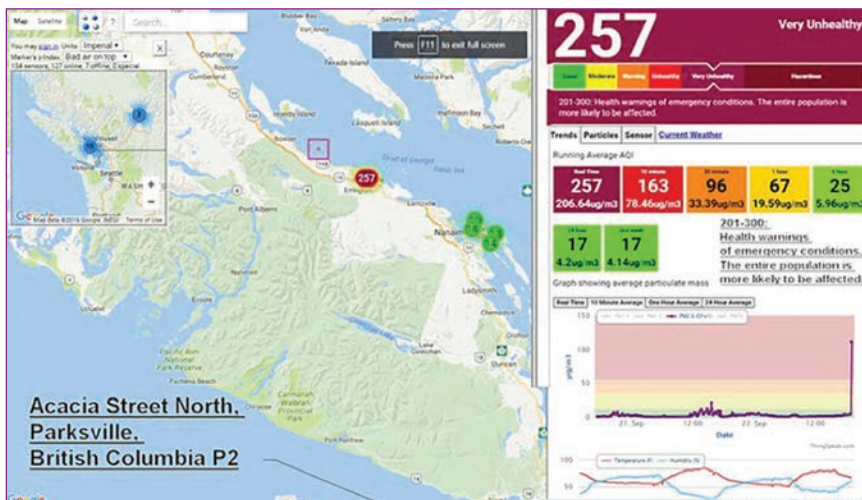
- Combustion of wood in densely populated residential areas is a major source of PM2.5 pollution in many communities.
- According to the World Health Organization (WHO), “Combustion of wood in residential areas and often under cold, calm meteorological conditions can nonetheless lead to high exposure compared to other pollution sources, owing to the principle of intake fraction.”²⁰⁹ The intake fraction is the proportion of released emissions inhaled by residents.
- The USEPA reports that an estimated 70% of smoke from a chimney can actually re-enter that home or a neighbor's home.²¹⁰ A 2014 California study found that a home provides little shielding from outdoor wood smoke. The study showed that 78% of black carbon particles from the outside smoke ended up inside neighboring homes.²¹¹

THE GROWTH OF RECREATIONAL WOOD BURNING

- Another study that used personal monitors showed that exposure to the damaging effects of black carbon from wood smoke infiltrated neighborhood homes.²¹²
- Smoke from outdoor wood burning from a fire pit can seep into neighboring homes. A very unhealthy level of wood smoke was detected inside a home when a neighbor was burning wood in a fire pit. The result was a doubling of PM_{2.5} levels in the home. With even short-term exposures, there are increases in hospitalizations and death rates.²¹³
- The amount of outdoor wood smoke that seeps into homes from neighboring fireplaces or from outdoor wood fires depends on a number of factors, including the home's age, construction, and condition. It also depends on the wood smoke particle size, meteorological conditions, and the rate at which outdoor air enters the home.²¹⁴



Figure 5: PM_{2.5} Levels Measured Inside A Home Near A Wood Burning Fire Pit in British Columbia



Smoke from outdoor wood burning from a single fire pit can seep into neighboring homes. A very unhealthy level of wood smoke was detected inside a home when a neighbor was burning wood in a fire pit. The result was a doubling of PM_{2.5} levels in the home. With even short-term exposures, there are increases in hospitalizations and death rates.

Source: Results measured using a PurpleAir Sensor, <http://www.purpleair.org>
See <https://woodsmokepollution.org/recreational-fires.html>

IV. Regulating Wood Smoke

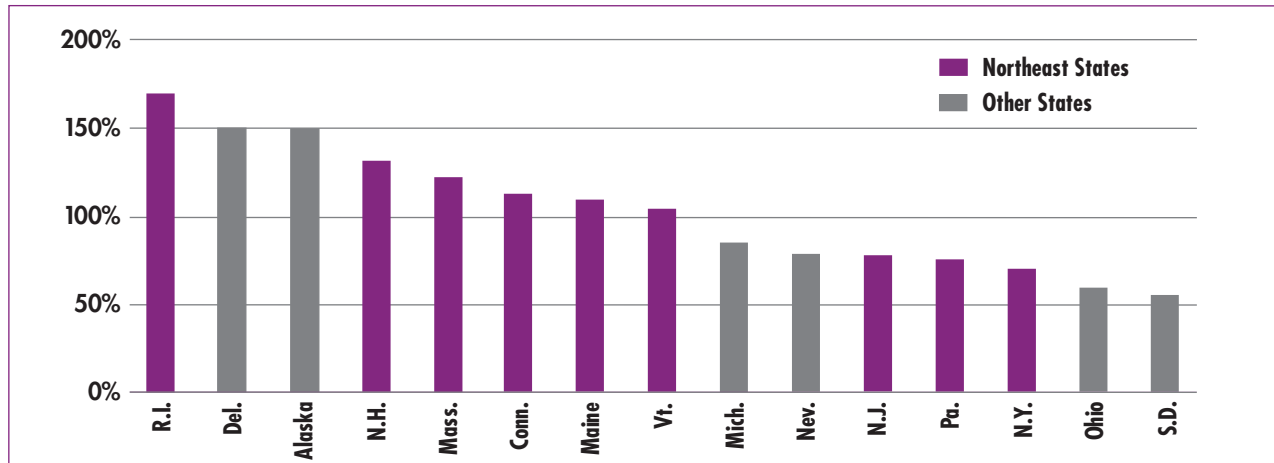


Despite scientific evidence clearly demonstrating the health effects associated with wood smoke, there has been an increase in the number of households in the U.S. that burn wood.

- Despite scientific evidence clearly demonstrating the health effects associated with wood smoke, there has been an increase in the number of households in the U.S. that burn wood. Increasing energy prices and an emphasis on renewable fuel have resulted in a rising number of households burning wood over the past two decades.
- The increase in wood as the main source of household heating is most notable in the Northeast. As shown in Figure 4 on the next page, all nine states in New England and the Middle Atlantic saw at least a 50% jump from 2005 to 2012 in the number of households that rely on wood as the main heating source.²¹⁵
- As more people heat with wood, communities are struggling with ways to improve air quality. Wood-smoke problems are magnified in valleys prone to wintertime temperature inversions, where polluted air is trapped near the ground. In rural Montana communities²¹⁶ and in Fairbanks, Alaska,²¹⁷ for example, residential wood smoke contributes up to 80% of winter PM2.5.

THE GROWTH OF RECREATIONAL WOOD BURNING

Figure 6: Increase in Homes Using Wood as Main Heating Source (2005-2012)



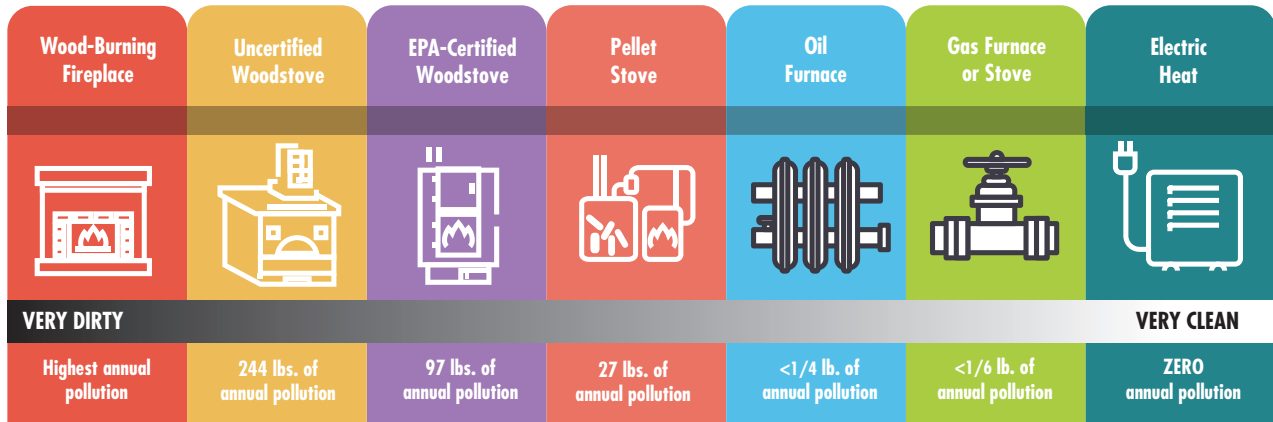
Source: <https://www.eia.gov/todayinenergy/detail.php?id=15431#>

- Wood smoke also contributes to air pollution in urban settings in the U.S. In San Jose, CA, Atlanta, GA, and Seattle, WA, wood burning contributes up to 30% of winter PM_{2.5}.²¹⁸
- Burning wood in campfires, bonfires, chimineas, backyard fire pits, and burn barrels is considered “open burning,” defined by EPA as smoke that enters the air directly, without first going through a chimney, flue, vent, or other similar path. Open burning includes recreational burning, which is generally defined as an outdoor fire burned for warmth or ambiance, as well as burning brush or other land-clearing debris.
- Open burning in outdoor fireplaces, chimineas, fire pits, wood-burning barbecues, and smokers is growing in popularity despite data that demonstrate health effects associated with wood smoke. According to a 2017 survey, outdoor fire pits/fireplaces are the most popular outdoor home design element.²¹⁹ These devices emit smoke low to the ground, directly in our breathing zone. Stagnant conditions and winter temperature inversions can result in wood smoke hanging close to the ground, easily penetrating nearby homes.

Burning wood in campfires, bonfires, chimineas, backyard fire pits, and burn barrels is considered “open burning,” defined by EPA as smoke that enters the air directly, without first going through a chimney, flue, vent, or other similar path.

THE HARMFUL EFFECTS OF WOOD SMOKE AND

Figure 7: Relative Emissions of Fine Particles



Source: Puget Sound Clean Air Agency, www.pscleanair.org

Open burning in outdoor fireplaces, chimineas, fire pits, wood-burning barbecues, and smokers is growing in popularity despite data demonstrating health effects associated with wood smoke.

Air Quality Index (AQI) Alerts

- Most of the authority to regulate air pollution comes from the federal Clean Air Act (CAA). Section 110(a)(1) of the CAA requires states to regulate sources of air pollution through a state plan that provides an implementation, maintenance and enforcement plan regarding the federal air quality standards.
- The National Ambient Air Quality Standards (NAAQS) are used to notify the public when there are high levels of pollutants in the air. The Air Quality Index (AQI) is also used, and a value of 100 on the AQI generally corresponds to the NAAQS for air pollutants. When AQI values are above 100 the air quality is considered to be unhealthy. For PM_{2.5}, an AQI over 35 $\mu\text{g}/\text{m}^3$ for 24 hours is considered to be in the unhealthy category.
- In parts of California, regional Air Districts issue a “Winter Spare the Air Alert,” which prohibits wood burning indoors and outdoors when the PM 2.5 24-hour average is 35 $\mu\text{g}/\text{m}^3$, or 100 on the AQI scale. Connecticut bans open burning when the AQI is 75 and Massachusetts bans burning when the AQI is above 50. In Pennsylvania, it is up to counties to ban burning when the AQI is high.

THE GROWTH OF RECREATIONAL WOOD BURNING

Table 7: EPA's Air Quality Index (AQI) for 24-hour Fine Particle Pollution (PM2.5)

24-Hour PM2.5 (µg/m³)	AQI Categories	AQI Values	AQI Cautionary Statements	AQI Health Effects Statements
0–12.0	Good	0–50	None	None
12.1–35.4	Moderate	51–100	Unusually sensitive people should consider reducing prolonged or heavy exertion.	Respiratory symptoms possible in unusually sensitive individuals, possible aggravation of heart or lung disease in people with cardiopulmonary disease and older adults.
35.5–55.4	Unhealthy for Sensitive Groups	101–150	People with heart or lung disease, older adults, and children should reduce prolonged or heavy exertion.	Increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease, and premature mortality in people with cardiopulmonary disease and older adults.
55.5–150.4	Unhealthy	151–200	People with heart or lung disease, older adults, and children should avoid prolonged or heavy exertion; everyone else should reduce prolonged or heavy exertion.	Increased aggravation of heart or lung disease and premature mortality in people with cardiopulmonary disease and older adults; increased respiratory effects in general population.
150.5–250.4	Very Unhealthy	201–300	People with heart or lung disease, older adults, and children should avoid all physical activity outdoors. Everyone else should avoid prolonged or heavy exertion.	Significant aggravation of heart or lung disease and premature mortality in people with cardiopulmonary disease and older adults; significant increase in respiratory effects in general population.
Greater than 250.5	Hazardous	Over 300	Everyone should avoid all physical activity outdoors; people with heart or lung disease, older adults, and children should remain indoors and keep activity levels low.	Serious aggravation of heart or lung disease and premature mortality in people with cardiopulmonary disease and older adults; serious risk of respiratory effects in general population.

Who is “SENSITIVE” to PM2.5? People with heart or lung disease, older adults, children and people of lower socioeconomic status are the groups most at risk. See EPA’s Technical Assistance Document (link below). Also at higher risk: prenatal children (low birth weight, pre-term birth and IQ reduction), diabetics, and people with higher exposures such as athletes exposed during exercise.

Sources:

National Ambient Air Quality Standards for Particulate Matter – Final Rule, effective March 18, 2013, Federal Register, Vol. 78, No. 10, Jan. 15, 2013, p. 3181 (<http://www.gpo.gov/fdsys/pkg/FR-2013-01-15/pdf/2012-30946.pdf>)

Revised Air Quality Standards for Particle Pollution and Updates to the Air Quality Index (AQI), Dec. 14, 2012, p. 4 (https://www.epa.gov/sites/production/files/2016-04/documents/2012_aqi_factsheet.pdf)

Technical Assistance Document for the Reporting of Daily Air Quality, May 2016 (<https://www3.epa.gov/airnow/aqi-technical-assistance-document-may2016.pdf>)

Integrated Science Assessment for Particulate Matter – Final Report, Dec. 2009 (<https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=216546>)

Credit: Clean Air Fairbanks, cleanairfairbanks@gmail.com (<http://cleanairfairbanks.wordpress.com>)



Wood smoke can have a significant impact on exposures in neighborhoods where wood burning is prevalent, even during periods when the NAAQS reports general good air quality. This is because there are no air monitors in that area to pick up the wood smoke emissions.

Air Quality Index (AQI) Limitations

- The AQI is linked to a PM_{2.5} monitoring network. The monitors are inadequately placed in rural areas where wood burning often takes place. Since it is common for wood smoke to originate from sources within neighborhoods where monitoring networks are lacking, air monitoring networks do not adequately measure local air quality.
- Wood smoke can have a significant impact on exposures in neighborhoods where wood burning is prevalent, even during periods when the NAAQS reports general good air quality. This is because there are no air monitors in that area to pick up the wood-smoke emissions.²²⁰
- Studies show that the 24-hour NAAQS for PM_{2.5} (35 µg/m³) may not adequately protect against sub-daily peaking at hourly concentrations associated with adverse health effects.²²¹ A spatial analysis of wood smoke in the Adirondack Mountains concluded that current air quality standards mask these episodic peaks through daily averaging.²²²
- Both short- and long-term exposure to PM_{2.5} has been associated with mortality rates from all causes at levels that are below the current USEPA 24-hour PM_{2.5} standard of 35 µg/m³ daily.²²³

Open Burning Regulations

- Federal law prohibits open burning of residential, commercial, institutional or industrial solid waste with certain exceptions for land-clearing debris, diseased trees and debris from emergency clean-up operations. (40 CFR Part 257-3.7(a))
- In spite of regulations, trash burning remains a problem in some rural areas and ordinances are often poorly enforced. Some states,

THE GROWTH OF RECREATIONAL WOOD BURNING

such as Wisconsin and Pennsylvania, allow open burning of domestic waste. Other states, including Connecticut, only allow burning of brush.

- Some local governments regulate the material burned, while others regulate distance from property line and/or the size of the fire. Some local governments ban fires on days when AQI alerts are issued. The following is a sampling of regulations from around the country.
- In Montgomery County, MD, some recreational burning is allowed under strict conditions. However, most open burning without a permit is prohibited. Recreational fires must be at least 20 feet away from any building or structure, smoke is “not allowed to cross property lines,” and burning is not allowed on “Code Orange” or “Code Red Air Quality days.”²²⁴
- In Portland, Oregon, recreational fires must burn clean, dry, cord-type firewood and be less than three feet in diameter, with a pile less than two feet high.²²⁵
- Allegheny County, PA, has the same fire size requirements as Portland, and also specifies that only fire logs, paraffin logs, or wood pellets may be used. The fire must be 15 feet from the nearest neighbor’s dwelling or inhabited area, any property line, roadway, sidewalk, or public accessway.²²⁶
- In many cities, including Denver and Boston, there are complete bans on outdoor fires, including portable fire pits and chimineas at all times of the year.²²⁷ Outdoor burning is banned in 21 cities in Massachusetts in addition to Boston.
- The variability in state wood burning regulations demonstrates the specific risk-management challenges that wood smoke is creating throughout the U.S. State wood smoke regulatory programs in the Northeast are summarized in Table 8.



Some local governments regulate the material burned, while others regulate distance from property line and/or the size of the fire. Some local governments ban fires on days when AQI alerts are issued.

THE HARMFUL EFFECTS OF WOOD SMOKE AND

Table 8: Residential Open and Recreational Burning Restrictions in Northeast States

State	Total Burn Bans	Burn Bans During Poor Air Quality Days	PM2.5 Monitoring Stations	Recreational Burning Limits Examples: Campfire, Bonfire, Chiminea
CT ¹	No	AQI = >75	8	Prohibited if nuisance is created or is restricted by local municipality.
ME ²	No	No	11	As long as no nuisance is created.
MA ³	22 cities ⁴	AQI = >51 ⁵	28	Some cities and towns regulate, limit/prohibit use of chimineas, fire pits and outdoor fireplaces.
NH ⁶	No	No	14	Campfire fires < 2-foot diameter may be burned during the day. All others must be burned between 5 p.m. and 9 a.m.
NJ	No	When conditions “make such fires hazardous”	33	Unless “offensive or objectionable because of smoke emissions”; Fire pit regulations set by local officers.
NY ⁷	Spring ⁸	No	>50	Exceptions for ceremonial or celebratory bonfires; only charcoal or clean, untreated or unpainted wood can be burned; campfires <3’ x 4’.
PA ⁹	Designated air basins ¹⁰	Varies by county ¹¹	44	Outside of designated air basins, if smoke cannot be seen or smelled outside of the property where the burning is taking place; does not “interfere with the reasonable enjoyment of life or property”; does not cause damage to vegetation or property; and is not harmful to human or animal health. Domestic refuse ok to burn where not more than two families are living and when generated onsite. ¹²
VT ¹³	No	No	5	When not prohibited by local ordinance. Only natural wood and yard waste from property maintenance. No trash can be burned.

Sources:

¹ CT DEEP. http://www.ct.gov/deep/cwp/view.asp?a=2684&q=531300&deepNav_GID=1619

² Department Of Environmental Protection Chapter 102: Open Burning Chapter 102: OPEN BURNING, <http://www.maine.gov/dacf/mfs/archive/fpd/downloads/openburning.pdf>

³ <http://www.mass.gov/eea/agencies/massdep/air/quality/open-burning-answers-to-your-burning-questions.html#A Word About Fire Pits>

⁴ Campfires, fire pits, burn barrels and burning of brush and yard waste prohibited

⁵ <http://www.mass.gov/eea/docs/dep/air/community/noburn.pdf>

⁶ <https://www.des.nh.gov/organization/commissioner/pip/publications/ard/documents/quick-guide.pdf>

⁷ <http://www.dec.ny.gov/chemical/58519.html>

⁸ Defined as smoke emitted directly into the air, including burning in barrels

⁹ PA DEP. Air Pollution From Household Open Burning In Pennsylvania

¹⁰ <http://www.pacode.com/secure/data/025/chapter129/s129.14.html>

¹¹ <http://www.achd.net/air/pubs/pdf/Article21.pdf>

¹² “Domestic Refuse” does not include such items as demolition waste, insulation, shingles, treated wood, paint, painted or stained objects or furniture, tires, mattresses, box springs, metal, insulating coating on wire, television sets and appliances, automobiles, automotive parts, batteries, PVC products, waste oil and other petroleum products.

¹³ <http://dec.vermont.gov/air-quality/compliance/open-burning>; <http://dec.vermont.gov/tags/backyard-burning>; <http://dec.vermont.gov/sites/dec/files/aqc/compliance/documents/BYBFactsheet.pdf>

THE GROWTH OF RECREATIONAL WOOD BURNING

- In the state of Washington, all burning is banned in counties where there is no local clean air agency.²²⁸
- California's regional air pollution control agencies prohibit all wood burning, including all outdoor wood burning, during their "Spare the Air Tonight" warnings issued between the months of November and February. The ban goes into effect when the PM2.5 24-hour average NAAQS reach $35 \mu\text{g}/\text{m}^3$ or 100 on the AQI scale.²²⁹
- Utah's ban on burning takes place during winter inversions, which occur between November and March. In certain counties the ban includes outdoor fireplaces, fire pits and charcoal grill smokers.²³⁰

Regulations in Allegheny County, Pennsylvania

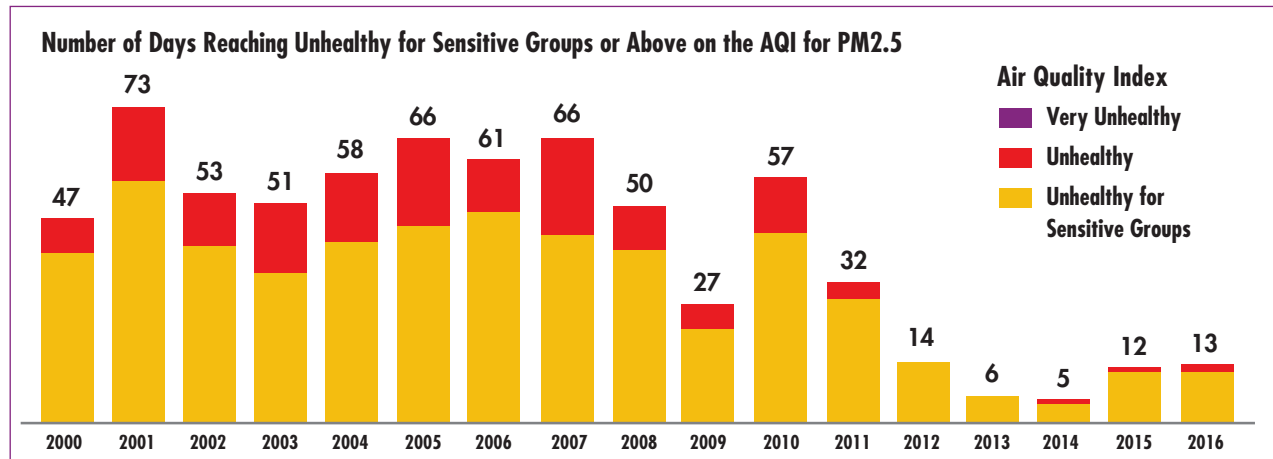
- In 2017, the annual PM2.5 concentrations recorded in Allegheny County ranked thirteenth among all U.S. counties. Among U.S. cities, Pittsburgh, the county seat, was the eighth most polluted for annual PM2.5. Nearly 2.6 million people live in this metropolitan area.²³¹
- Nearly 33% of those living in the Pittsburgh-New Castle-Weirton Metropolitan Area suffer from illnesses that could be caused or exacerbated by small diameter particles. Rates of childhood asthma in the region are higher than the national average at 13%; in some of the most polluted areas, rates are as high as 25%.²³² In the Monongahela River Valley, a highly populated valley with heavy industry, an estimated 1,406 more deaths occurred between 2000 and 2008 than expected, based on national rates, due to poor air quality.²³³
- Wood burning complaints are among the most common problems reported to the Allegheny County Health Department's Air Quality Program.²³⁴ Allegheny County is hilly, with valleys that trap wood smoke near the ground during periods of still, damp air and temperature inversions. In rural parts of the county, it is not uncommon for people to use burn barrels to dispose of their trash.



Some local governments regulate the material burned, while others regulate distance from property line and/or the size of the fire. Some local governments ban fires on days when AQI alerts are issued.

THE HARMFUL EFFECTS OF WOOD SMOKE AND

Figure 8: Air Quality Index for PM2.5 in 2016 in Pittsburgh, PA



Source: Preliminary air quality data as reported to EPA's Air Quality System and AirNow.gov

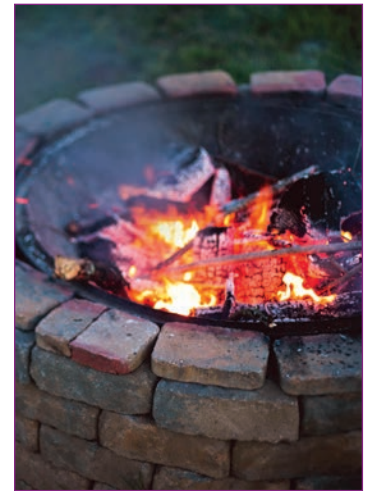
In municipalities without curbside trash collection or mandated recycling, burning is the easiest and least expensive method to dispose of household and yard waste.

Burning is legal under state law, but is restricted by the Allegheny County Health Department, which is responsible for protecting the public's health by regulating air pollutants and enforcing federal pollution standards.

- Burning is legal under state law, but is restricted by the Allegheny County Health Department (ACHD), which is responsible for protecting the public's health by regulating air pollutants and enforcing federal pollution standards. Title 25 of the Pennsylvania Code allows open burning outside of designated air basins, with several conditions. Open burning is considered legal if the smoke cannot be seen or smelled outside of the property burning, if it does not interfere with the reasonable enjoyment of life or property, if it does not cause damage to vegetation or property, and if it is not harmful to human or animal health.
- Exceptions to restrictions include fires that are set to prevent fire hazards, instructions to fire-fighting personnel, prevention and control of disease or pests, fires in conjunction with the production of agricultural commodities, fires burning household waste generated in a home occupied by no more than two families, recreational or ceremonial fires, and fires used for cooking food.²³⁵

THE GROWTH OF RECREATIONAL WOOD BURNING

- During air pollution alerts, open burning is restricted. However, particulate matter (PM) must reach levels of $350 \mu\text{g}/\text{m}^3$ over the 24-hour average before an alert goes into effect.²³⁶
- Allegheny County historically had a general ban on open burning, but it was loosely enforced. Because of an increase in public complaints about wood smoke, the Allegheny Health Department broadened its open-burning restrictions to include recreational burning: campfires, bonfires, chimineas, and backyard fire pits.²³⁷
- In open burning, only clean wood, propane or natural gas, fire logs, paraffin logs, or wood pellets may be used; fires may be no larger than 3' wide by 3' long by 2' high and must be at least 15 feet from the nearest neighbor's dwelling or inhabited area; and all wood-burning activities are prohibited on Air Quality Action days. When air quality inspectors investigate citizen complaints, they may issue fines for nuisance smoke and smoke odors. Fines begin around \$250 and increase with repeated noncompliance.²³⁸
- Despite these recently added restrictions, wood smoke is still a source of pollution in Allegheny County. Pennsylvania's non-profit Clean Air Council is concerned that the ACHD public education campaign falls short of strongly informing the public about the health threats of wood smoke.²³⁹ The Council established the *iseesmokepa.org* website to report residential smoke, and published "How to Talk About Wood Smoke Pollution," which is a guide to negotiating with neighbors about wood burning.²⁴⁰
- In Pittsburgh, the non-profit "Group Against Smog & Pollution" (GASP) developed educational materials on wood smoke and burn barrels.²⁴¹ The group also manages a Citizens Smoke Reading Program, which empowers people to understand emissions and instructs them on how to report violations. The Heinz Endowments and the Pittsburgh Foundation provided 1,000 "Speck" air monitors to public libraries, schools and citizen groups in the region. These devices detect indoor PM 2.5.



Because of an increase in public complaints about wood smoke, the Allegheny Health Department broadened its open-burning restrictions to include recreational burning: campfires, bonfires, chimineas, and backyard fire pits.

Regulations in Connecticut

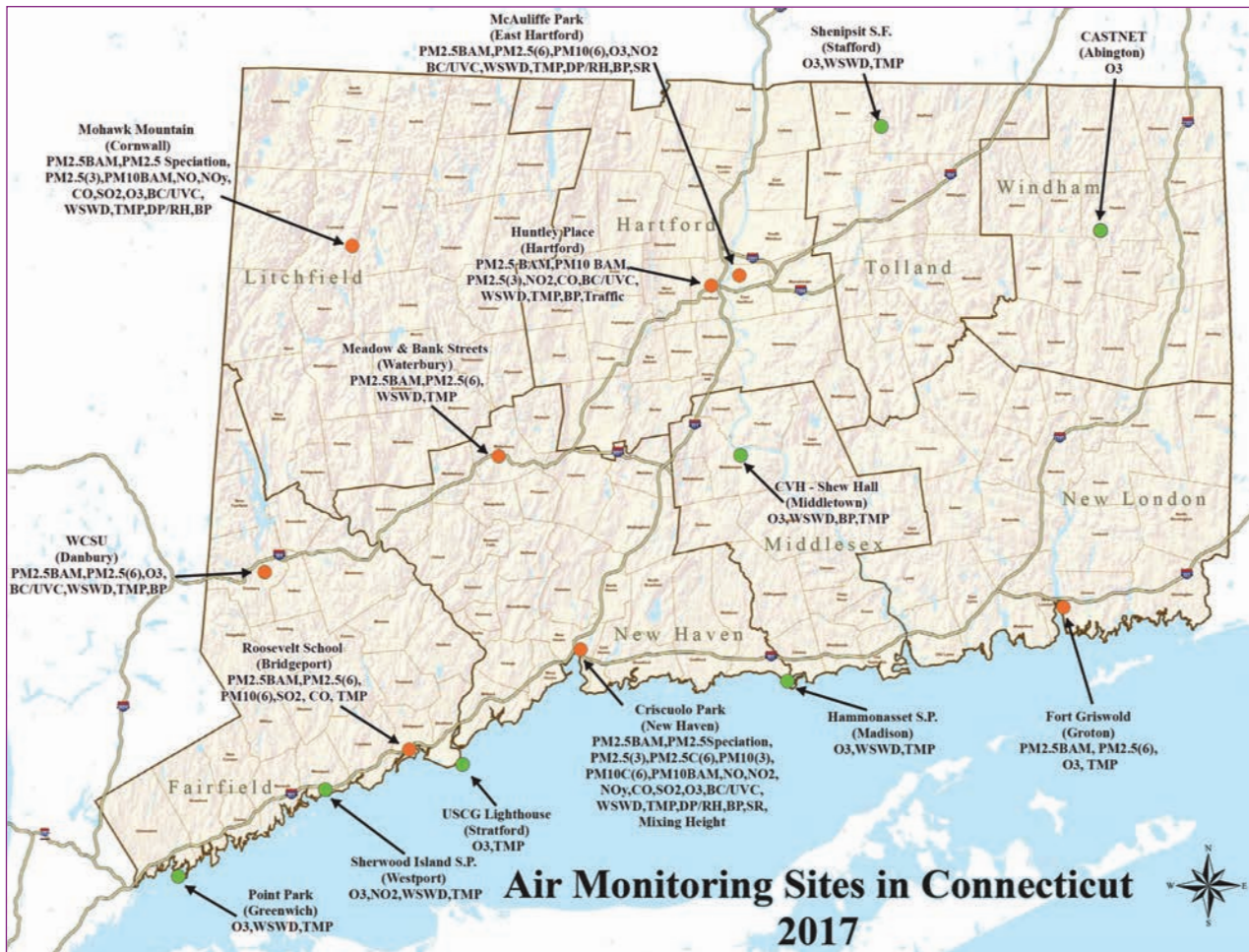


In Connecticut, particle pollution from fireplaces, wood stoves and outdoor burning creates a serious air quality problem in low-lying areas when inversions trap smoke close to the ground.

- In Connecticut, particle pollution from fireplaces, wood stoves and outdoor burning creates a serious air quality problem in low-lying areas when inversions trap smoke close to the ground. Burning wood as a primary heat source in Connecticut is increasingly common—more than doubling between 2000 and 2010.²⁴²
- About 26,000 households in Connecticut burn wood for heat and wood burning is especially prevalent in the northeast corner of the state.²⁴³ Families statewide burn wood both inside and outside for ambience, despite a growing population that is sensitive to the health effects of smoke.
- Statistics show that asthma rates in the state are higher than the national rates.²⁴⁴ Nearly 10% of all children and 9% of adults have been diagnosed with asthma. One in 20 Connecticut adults has been diagnosed with Chronic Obstructive Pulmonary Disease (COPD).²⁴⁵ In addition, 16% of the population is over 65.²⁴⁶
- Connecticut allows the recreational burning of campfires, bonfires, fire pits, chimineas, or similar devices, unless they create a nuisance for neighbors or are in violation of any restrictions imposed on such burning by a local municipality.²⁴⁷ As is the case in Allegheny County, PA, defining a “nuisance” is challenging and expensive.
- Connecticut’s Department of Energy & Environmental Protection (DEEP) defines a nuisance as something that substantially interferes with the use or enjoyment of another person’s property.²⁴⁸
- It is very important for local health directors in Connecticut to know that the burning of wood in a campfire, bonfire, chiminea or other similar devices is prohibited if the burning is conducted in a way that creates a nuisance for neighbors. A local health director in Connecticut has the authority to shut down a wood-burning device if it creates a public health nuisance.

THE GROWTH OF RECREATIONAL WOOD BURNING

Figure 9: Air Quality Monitors in Connecticut



Source: http://www.ct.gov/deep/lib/deep/air_monitoring/ct_airmonitors.pdf

- There are only eight PM2.5 monitors in the state. No PM2.5 monitors are located in areas where wood burning is most common.
- There are seven additional air monitoring sites in the state that do not measure PM2.5.
- Although monitoring data from 2008 through 2012 show that Connecticut meets EPA's PM2.5 standards, there are only eight PM2.5 monitors in the state. Even more troubling, there are no monitors in areas where wood burning is most common.
- Campfires and bonfires are not defined by state statute or regulation; however, some towns have special requirements to conduct this type

THE HARMFUL EFFECTS OF WOOD SMOKE AND



Although monitoring data from 2008 through 2012 show that Connecticut meets EPA's PM2.5 standards, there are only eight PM2.5 monitors in the state. Even more troubling, there are no monitors in areas where wood burning is the most common.

of burning and may require homeowners to obtain a permit prior to burning a campfire on their property. Special requirements and permits may include limits on the size of the fires and certain setback distances from structures and/or property lines.

- In Connecticut, open burning refers to brush fires, camp fires and bonfires. Connecticut only allows clean, unprocessed wood to be burned. Processed wood is wood that has been glued or treated, including crates, pallets, and wood scraps. Campfires may not contain construction debris, wood pallets, or painted, stained, or treated wood. Unprocessed wood is untreated, natural wood and rough-cut lumber. Garbage may not be burned in campfires, bonfires, fire pits, chimineas or other similar devices.
- Open burning in Connecticut is restricted under the following conditions: when the AQI is forecast to be 75 or higher anywhere in the state; when the Forest Fire Danger Index is rated High, Very High, or Extreme; when the national or state ambient air quality standards may be exceeded; when a hazardous health condition might be created; or when there is an advisory from DEEP of any air pollution episode.²⁴⁹
- For open brush burning, residents must have a valid and signed permit from local officials, typically the town's Fire Marshal. Open burning is not permitted to clear land prior to construction activities and cannot be used as a way to dispose of construction debris, household trash, or leaves.
- Enforcement of wood smoke exposures is divided between the DEEP and local health departments in Connecticut. If the offending wood smoke comes from an Outdoor Wood Furnace (OWF), the DEEP handles the complaint. If the OWF complies with state statutes, but still harms neighbors, the DEEP will turn the issue over to the local health department.

THE GROWTH OF RECREATIONAL WOOD BURNING

- In Connecticut, if an outdoor wood furnace (OWF) does not comply with state statutes, the DEEP will enforce compliance or shut down the OWF.²⁵⁰ All other offending wood smoke issues created by the OWF are handled by the local government, usually by the local health department in the town where the OWF is located.

Regulations in San Joaquin Valley, California

- Unique geographic and meteorological conditions and a growing population in the San Joaquin Valley contribute to poor air quality. Burning wood specifically is the leading cause of wintertime pollution in the Valley.
- In the past, the San Joaquin Valley experienced some of the nation's most polluted air, leading to a high number of hospitalizations for a variety of respiratory and cardiovascular diseases. These included asthma, acute bronchitis, pneumonia, and myocardial infarctions.²⁵¹
- To attain the NAAQS and improve public health, the San Joaquin Valley Unified Air Pollution Control District adopted a rule to reduce emissions from winter wood smoke. Rule 4901 was the first burn regulation in the U.S. to be applied uniformly across an entire air basin.
- Rule 4901 was amended in 2003 to require mandatory curtailment of residential wood burning when the air quality index reached 150, or about $65 \mu\text{g}/\text{m}^3$ of $\text{PM}_{2.5}$.²⁵²
- Newer amendments to Rule 4901 allow only certain clean-burning stoves, fireplace inserts or heaters to be used when $\text{PM}_{2.5}$ concentrations are forecast to reach 20 to $65 \mu\text{g}/\text{m}^3$.²⁵³ These regulations discourage, but do not prohibit, wood burning when $\text{PM}_{2.5}$ concentrations are below $20 \mu\text{g}/\text{m}^3$.²⁵⁴

San Joaquin Valley



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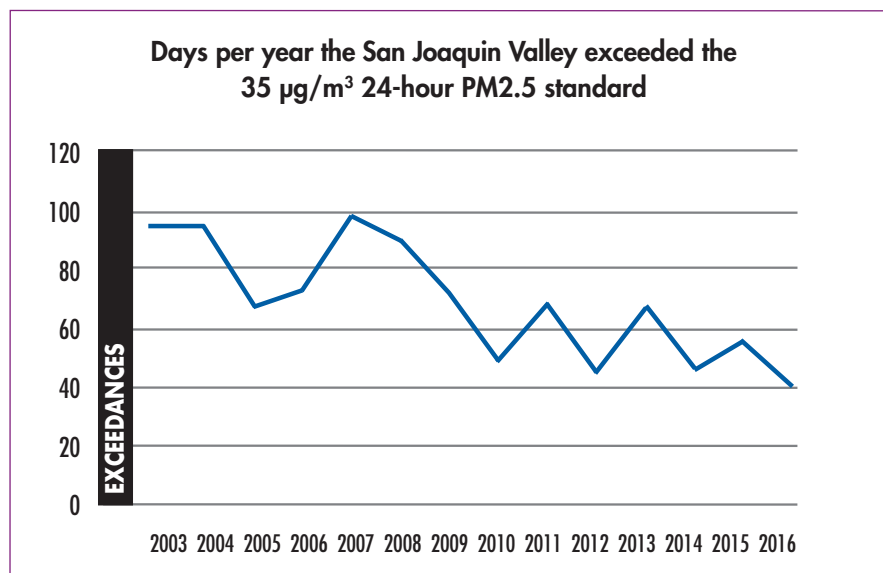
THE HARMFUL EFFECTS OF WOOD SMOKE AND



Wood smoke regulations improve air quality and public health, according to studies of the San Joaquin Valley, which has one of the oldest and most stringent wood smoke regulatory programs in the country.

- Wood-smoke regulations improve air quality and public health according to studies of the San Joaquin Valley, which has one of the oldest and most stringent wood smoke regulatory programs in the country.
- Over the past decades, cleaner technologies have been developed to reduce emissions from wood-burning devices. San Joaquin Valley residents can use EPA-certified devices unless air pollution climbs to a critical point.
- Curtailments of residential wood combustion under Rule 4901 have resulted in substantial health benefits for San Joaquin Valley residents. By 2008, wood-burning curtailments had resulted in average daily PM 2.5 reduction of 13.6% in California's ninth-largest city, Bakersfield, at the southern end of the San Joaquin Valley.²⁵⁵

Figure 10: San Joaquin Valley PM 2.5 Reduction



Source: San Joaquin Valley Air Pollution Control District. Record Setting PM_{2.5} Air Quality in 2016. See <http://valleyair.org/pm25highlights.htm>

THE GROWTH OF RECREATIONAL WOOD BURNING

- By 2008, air quality in the San Joaquin Valley during the winter had improved dramatically. Burn-season average concentrations of benzo(a)pyrene decreased by 32%; butadiene decreased by 44%; benzene decreased by 29%; and toluene decreased by 34%. Average concentrations of PM2.5 during the winter burn season decreased by 25%.²⁵⁶
- By 2015, the San Joaquin Valley recorded reductions in both fine particulate pollution (PM 2.5) and cardiovascular hospitalizations in the air basin.²⁵⁷ In 2016, the number of days that exceeded the 24-hour PM2.5 standard reached an all-time low.
- A study of San Joaquin Valley residents aged 65 years and older found that Rule 4901 prevented 7% of cardiovascular disease cases in the entire air basin, 8% of cases in rural areas, and 5% of cases in urban regions. In addition, Rule 4901 prevented 16% of ischemic heart disease cases in the entire air basin, 17% of cases in rural areas, and 13% of cases in urban regions.²⁵⁸
- The study actually underestimates the effectiveness of the San Joaquin Valley's wood burning restrictions because PM2.5 levels near many wood-burning sites can be up to 25% higher than shown by monitoring because the monitors are not nearby.²⁵⁹
- In addition, the data do not reflect exposures to PM2.5 from ambient outdoor air that enters homes, and from the indoor air in homes that burn wood.
- Rule 4901, the first burn regulation in the U.S. that applies uniformly across an entire air basin, is considered the most stringent in the nation, and the resulting health improvements have been clearly documented. Since Rule 4901 was implemented in the San Joaquin Basin, air quality has improved and hospital admissions have fallen significantly.



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Cigarette smoke and wood smoke contain many of the same toxic chemicals, yet cigarette smoke is heavily regulated by all levels of government while wood smoke is barely regulated.

Second-Hand Cigarette Smoke Heavily Regulated, Wood Smoke Lightly Regulated

- Cigarette smoke and wood smoke contain many of the same toxic chemicals, yet cigarette smoke is heavily regulated by all levels of government while wood smoke is barely regulated. How did cigarette smoke come to be so stringently regulated?
- Reports on the dangers of second-hand smoke were the impetus behind governmental regulations to restrict second-hand cigarette smoke. The 1986 report from the Surgeon General, “The Health Consequences of Involuntary Smoking,”²⁶⁰ translated scientific evidence on second-hand smoke into policy initiatives.
- The report concluded that second-hand smoke caused diseases, including lung cancer, in healthy nonsmokers. Children of parents who smoke have an increased frequency of respiratory infections compared to the children of nonsmokers.
- The report also found that simply separating smokers from nonsmokers within the same air space may reduce, but does not eliminate, the exposure of nonsmokers to environmental tobacco smoke.
- In 2006, the Surgeon General concluded that local smoke-free policy initiatives engaged communities in an intensive process of public education and debate. It was also found that early on, local second-hand smoke-free policies were often more successful than federal or state initiatives.²⁶¹
- “This process raises public awareness regarding the health risks that second-hand smoke exposure poses to nonsmokers, increases public support for policy measures that provide protections from these risks, and changes public attitudes and norms regarding the social acceptability of smoking. These changes, in turn, lay the

THE GROWTH OF RECREATIONAL WOOD BURNING



groundwork for successfully enacting and implementing the proposed policy, which reinforces and accelerates these changes,” the report stated.²⁶²

- As of 2018, a total of 22,661 municipalities were covered by a 100% smoke-free provision in non-hospitality workplaces, and/or restaurants and bars, by either a state, commonwealth, territorial, or local law. Forty-two states and the District of Columbia have local laws in effect that require non-hospitality workplaces and/or restaurants and bars to be 100% smoke-free.
- In addition, there were 3,676 states, commonwealths, territories, cities, and counties with a law that restricts smoking in one or more outdoor areas.²⁶³
- The critical factor driving adoption of these laws is the clear scientific evidence that second-hand smoke causes disease in nonsmokers. This rationale applies to wood-smoke emissions as well. Residential wood smoke is a significant contributor to PM2.5 emissions in both urban and rural areas in the U.S.

Children of parents who smoke have an increased frequency of respiratory infections compared to the children of nonsmokers.

THE HARMFUL EFFECTS OF WOOD SMOKE AND

Table 9: Milestones in Establishing Second-Hand Smoke Policies in the U.S.

Year	Event
1971	The Surgeon General proposes a federal smoking ban in public places.
1972	The first report of the Surgeon General to identify second-hand smoke as a health risk is released.
1973	Arizona becomes first state to restrict smoking in several public places.
1974	Connecticut passes first state law to apply smoking restrictions in restaurants.
1977	Berkeley, CA, is first community to limit smoking in restaurants and other public places.
1986	Surgeon General's and National Academy of Sciences (NAS) reports conclude second-hand smoke is a cause of lung cancer in healthy nonsmokers.
1988	New York City ordinance bans/limits smoking in various public places; California implements statewide ban on smoking aboard all commercial intrastate airplanes, trains, and buses.
1992	USEPA classifies second-hand smoke as a Group A (known to be harmful to humans) carcinogen.
1994	San Francisco passes a ban on smoking in all restaurants and workplaces; Utah enacts a law restricting smoking in most workplaces.
1995	New York City bans smoking in most workplaces; California passes legislation that prohibits smoking in most enclosed workplaces; Vermont's smoking ban is extended.
1997	California EPA is first major report to conclude definitively that second-hand smoke exposure is a cause of heart disease in nonsmokers.
2000	The New Jersey Supreme Court strikes down a local clean indoor air ordinance adopted by the city of Princeton on the grounds that state law preempts local smoking restrictions.
2001	Surgeon General reports a causal relationship between second-hand tobacco smoke exposure and heart disease mortality among women who were nonsmokers.
2002	The Michigan Supreme Court refuses to hear appeal of lower court rulings striking down a local clean indoor air ordinance on grounds that state law preempts local communities from adopting smoking restrictions more stringent than the state standard; Delaware enacts a comprehensive smoke-free law, and repeals a preemption provision precluding communities from adopting local smoking restrictions that are more stringent than state law.
2003	Connecticut and New York enact comprehensive smoke-free laws; Maine enacts a law requiring bars, pool halls, and bingo venues to be smoke-free; Iowa and New Hampshire supreme courts strike down local smoke-free ordinances, ruling that they are preempted by state law.
2004	IARC identifies second-hand smoke as "carcinogenic to humans"; Massachusetts and Rhode Island enact comprehensive smoke-free laws.
2005	Delaware and Illinois repeal state preemption provision precluding local smoking restrictions that are more stringent than the state standard; Montana, North Dakota, Georgia, Vermont, Maine, Rhode Island strengthen or enact legislation that make most workplaces and other areas smoke-free.
2006	DC, Colorado, New Jersey, Utah, Arkansas, and Puerto Rico enact or strengthen legislation requiring most workplaces and public places to be smoke-free.

Source: The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General. Office on Smoking and Health (US). Atlanta (GA): Centers for Disease Control and Prevention (US); 2006.

V. Conclusion



- Wood-smoke exposure is a serious risk to human health. It is known to cause and exacerbate many pulmonary and cardiovascular diseases.
- Despite convincing scientific evidence that wood smoke harms health, governments at all levels have failed to effectively regulate wood burning. Wood smoke now constitutes nearly 30% of airborne particle pollution in a number of urban areas during winter months, as heating with wood has continually increased.
- Summer wood burning has also increased. Outdoor fireplaces, fire pits, chimineas, and cooking appliances have become increasingly more common. Home furnishing catalogs sell many of these wood burning appliances for home recreational use. Supermarkets and big box stores sell them and promote them as well. Recreational wood burning often takes place in areas where homes are close together and the smoke often enters neighboring homes.
- This rise in the popularity of recreational wood burning poses a problem for regulators whose laws and regulations are often older

Despite convincing scientific evidence that wood smoke harms health, governments at all levels have failed to effectively regulate wood burning.

THE HARMFUL EFFECTS OF WOOD SMOKE AND



Raising public awareness of the potential health threats of wood smoke will increase public support for policy measures that provide protections from these risks, and change public attitudes and norms regarding the social acceptability of burning wood.

than this new craze of home outdoor wood burning. This increase places a burden on neighbors who complain about breathing other people's wood smoke without adequate regulations to protect them.

- Wood-smoke regulations and enforcement vary from state to state. Even within a state, enforcement of wood smoke issues can vary from town to town. Regulations put in place by towns, states, and the federal government have not caught up with the science on the harms of inhaling wood smoke.
- Research has shown that small particles, created by the burning of wood, remain airborne for longer periods of time than larger particles, meaning that they remain available for human inhalation.
- The particles can have a strongly negative effect on human health, causing and exacerbating lung diseases, and triggering cardiovascular events, cancers, and premature deaths. These health events can occur at air pollution levels well below regulatory standards.
- Short-term exposure to wood smoke aggravates lung diseases. It can cause asthma attacks, acute bronchitis, sinusitis, respiratory infections, and cardiac events.
- Long-term exposure to wood smoke can cause reduced lung function, chronic bronchitis, sinusitis, and lung cancer. It also can cause cardiovascular diseases, and cardiac events.
- Raising public awareness about the potential health threats of wood smoke will increase public support for policy measures that provide protections from these risks, and change public attitudes and norms regarding the social acceptability of burning wood. If governments, at all levels, could finally regulate cigarette smoke, after years without regulations, there is hope that eventually governments will better regulate wood smoke so that the public is finally protected.

VI. Recommendations



Recommendations for the Federal Government

- The federal government should adopt stricter wood-smoke standards. The current air standards are not strict enough to protect the public's health, with long-term exposures to PM2.5 causing an increased risk of harm, even at levels below the current air standards. The Clean Air Act requires that the Environmental Protection Agency (EPA) set air quality standards that protect even sensitive populations. The current laws clearly fail to protect human health as required by the Clean Air Act.
- The federal government should be required to test new wood-burning appliances for both their efficiency and emission levels before they are allowed to enter the marketplace. An example of such a failure are the outdoor wood furnaces that entered the marketplace without adequate testing, but which have proven to be harmful to both the environment and human health.
- The federal government should make clear what is allowed to be burned and what is not. Pressure-treated wood, plastics, building debris, and wood containing waxes, adhesives, and other dangerous additives should be banned from use in wood-burning appliances.
- The federal government should increase their education about wood smoke and its harms so that the public is more fully informed and can better protect their health.
- The federal government should require wood-burning appliances to contain a warning that wood smoke may be dangerous to health. Labeling requirements for tobacco products have proven to be effective in educating the public about the dangers of cigarette smoke; the same should be required for wood smoke.



Recommendations for States

- State governments should enact laws that clearly state that wood smoke entering another person's property is against the law, and violations are enforceable by shutting down the offending wood-burning appliance.
- States should use visual smoke passing onto neighbors' properties as proof of harm. Wood-smoke emissions that harm people should be recognized as proof of harm by the designated agency that inspects offending wood-smoke appliances.
- States should make clear to the public which state agencies are empowered to enforce laws to protect those being harmed by other people's wood-smoke emissions. In some states, local health departments are the agencies empowered to enforce these laws.
- States should include wood smoke in their nuisance clauses to better prevent and enforce wood smoke issues.
- States should install enough PM_{2.5} monitors to adequately reflect where wood-smoke emissions actually occur. For instance, although monitoring data from 2008 through 2012 show that Connecticut meets EPA's PM_{2.5} standards, there are only eight PM_{2.5} monitors in the state, and they are not located in areas where wood burning is the most common.
- States should enact wood burning bans when air quality does not meet EPA's health standards for either ozone or particulate levels. Communities that have done so have experienced significant improvements in air quality.
- State websites should include: why wood smoke is harmful to health; why wood smoke regulations should be enforced; and which state, county, or town agency enforces laws on harmful wood-smoke emissions.



Recommendations for City, Town, and County Governments

- City, town, and county governments should enact ordinances that clearly state that wood smoke entering another person's property is against the law, and is enforceable by shutting down the offending wood-burning appliance.
- City, town, and county governments should empower their local health departments to be the agency to enforce wood-smoke offenses, and encourage them to shut down wood-burning appliances when wood-smoke emissions harm other people.
- City, town, and county governments should ban outdoor wood furnaces, as they cannot be made safe for the environment or for people who live within half a mile of outdoor wood furnaces. Wood-smoke emissions from outdoor wood furnaces travel for half a mile and can enter all the homes within that area.
- The websites of city, town and county governments should include why wood smoke is harmful to health; why wood smoke regulations should be enforced; and which city, town or county government agency enforces the laws relating to harmful wood-smoke emissions.

Recommendations for Individuals

- Individuals need to understand that wood smoke is dangerous to their health. Individuals should protect themselves and their families from wood-smoke exposures. Pregnant women, infants, children, older adults, and people with pre-existing respiratory or cardiac diseases, diabetes, and breast cancer should avoid all wood-smoke exposures.

THE HARMFUL EFFECTS OF WOOD SMOKE AND



- Individuals should use natural gas-burning appliances instead of wood-burning ones. Even a cleaner or newer wood-burning stove will not necessarily improve the PM levels in your home. The U.S. Department of Energy found that about a third of homes that replaced their wood-burning device did not see indoor air quality improvements. A natural gas stove, if properly vented, will reduce emissions.
- Individuals should avoid burning wood. If they must, they should burn only clean, dry wood. Never burn trash. Most household waste is primarily comprised of plastics, which emit highly toxic compounds. Do not burn building debris, pressure-treated wood, or wood containing waxes, adhesives, or other dangerous additives. Synthetic logs should also be avoided.
- Individuals need to make sure that their wood-smoke emissions are not harming others. If their wood burning is harming others, they need to shut down the wood-burning appliance.
- Individuals should reduce all wood-smoke exposures. If wood smoke enters your home on a regular basis, you and your family need to get out of the smoke. Ask your neighbors to reduce the wood-smoke emissions that are harming you. If that fails, ask your local health department for enforcement help. If others are being harmed by the wood smoke, invite them to join you in asking for enforcement. If all fails, you may consider moving your residence. Obviously, nothing is more important than your family's health.
- Individuals who are experiencing wood smoke in their homes should purchase a HEPA filter while waiting for enforcement. A 2016 study by the Department of Energy found significant benefits from using high-efficiency HEPA air filters to reduce PM from wood smoke in homes. These filters, if properly sized for the volume of space you normally occupy, can reduce indoor particle pollution by as much as 60%.²⁶⁴
- Individuals should work to get their towns to pass ordinances that better protect people from being harmed by other people's wood burning.

VII. Glossary

Acronyms, Abbreviations, and Definitions

ACGIH - American Conference of Governmental Industrial Hygienists

ACHD - Allegheny County Health Department

ATSDR - Agency for Toxic Substances and Disease Registry

AQI - Air Quality Index

BaP - benzo[a]pyrene, a PAH that results from incomplete combustion

BC - black carbon

CAA - Clean Air Act

CCA - chromated copper arsenate

CDC - Centers for Disease Control and Prevention

CFR - Code of Federal Regulations

CNS - Central Nervous System

CO - carbon monoxide

COPD - Chronic Obstructive Pulmonary Disease

CTDEP - Connecticut Department of Environmental Protection

DOE - Department of Energy

DNA adduct - a segment of DNA bound to a cancer-causing chemical

GASP - Group Against Smog & Pollution

HAP - Hazardous Air Pollutant. Also known as toxic air pollutants or air toxics. Pollutants known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects.

IARC - The International Agency for Research on Cancer

NAAQS - National Ambient Air Quality Standards

NAS - National Academy of Science

NIH - National Institutes of Health

NIEHS - National Institute of Environmental Health Sciences, part of NIH

NTP - National Toxicology Program

Open burning - Defined by EPA as smoke that enters the air directly, without first going through a chimney, flue, vent, or other similar path. Includes recreational burning as well as burning brush or other land-clearing debris.

PAH - polycyclic aromatic hydrocarbon; part of a large group of organic compounds with two or more fused aromatic rings

PAH-DNA adducts - Environmental PAH exposures result in PAH-DNA adducts

PM - particulate matter

PM_{2.5} - fine particulate matter (2.5 microns or micrometers)

PM₁₀ - coarse particulate matter (10 microns or micrometers)

Recreational burning - Use of an outdoor fire for warmth or ambiance

SO₂ - sulfur dioxide

USEPA - U.S. Environmental Protection Agency

UFP - Ultrafine particulate matter

VOC - volatile organic compound

W-COPD - COPD associated with wood smoke

WHO - World Health Organization

WSPM - wood smoke particulate matter

T-COPD - COPD associated with tobacco smoking

µg/m³ - The concentration of an air pollutant (e.g., PM) in micrograms (one-millionth of a gram) per cubic meter of air

VIII. Endnotes

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From: Hecht, Sean [mailto:hecht@law.ucla.edu]

Sent: Wednesday, November 07, 2018 10:21 PM

To: EnvironmentalJustice@Coastal

Subject: Comment on Coastal Commission's draft Environmental Justice Policy Statement

Dear Commissioners, Senior Commission Staff, and Environmental Justice Team:

I submit this comment on the Coastal Commission's draft Environmental Justice Policy Statement in my personal capacity, as someone who has engaged with Commission processes and materials. I commend the Coastal Commission and its staff for moving forward with this essential initiative to improve equity in Commission processes and outcomes. As the draft Environmental Justice Policy Statement notes, "the Coastal Act is an inherently equitable law, designed to protect California's coast and ocean commons for the benefit of all the people." It is noteworthy that the Commission is looking reflectively at its work, with the intention of improving its impact on environmental equity.

My comments are limited to some brief observations about environmental justice and the accessibility and transparency of Commission processes and materials. As with any government agency's processes and materials, Commission resources may be less accessible or transparent to people in ways that are correlated with attributes such as income, race, religion, culture, national origin, ethnic group, age, or disability status, among other factors. The Statement includes this language:

"The Commission is committed to consideration of environmental justice principles ... during the planning, decision-making, and implementation of Commission actions, programs, policies, and activities."

This language can be interpreted to encompass ways in which access and transparency might differentially affect environmental justice values and communities, but it would be useful to be more direct and clear about the Commission's commitment both to these process-related values as well as to the substantive consideration of environmental justice principles.

The Commission should assess and address any inequities in access and transparency, especially where they may be correlated with the types of attributes listed above. Areas of specific concern include, for example: limitations on access to information relating to proposed projects or other items on Commission agendas; inequity in both access to Commissioners and staff, and transparency about that access; and limitations on access to information that sheds light on Commission policies, practices, precedent, and standards (for example, in administrative records, in policy documents, and from prior meeting materials). Given the reality that much Commission substantive precedent and policy is embodied in staff reports and Commission decisions that are not easily accessible or indexed online, this last point is significant.

Existing practices and relationships can amplify the impact of structural inequities, advantaging stakeholders that have consistent or frequent business in front of the Commission. This may be difficult to address, since frequent engagement in administrative processes inevitably creates familiarity and access. But to the maximum extent practicable, the Commission should develop processes and provide resources to diminish and eliminate disparities.

The following types of goals and strategies may be helpful to address these issues:

- Disseminating and maintaining information more effectively and accessibly, targeting diverse stakeholders;
- Accommodating diverse accessibility needs within hearing processes;
- Achieving more consistency and transparency in public and stakeholder access to Commissioners;
- Creating multiple modes of access to information about past, pending, and future proceedings; and
- Developing more comprehensive, and better-indexed and more searchable, document repositories online and in paper form.

I appreciate the opportunity to comment on the draft Statement.

Sincerely,

Sean B. Hecht
Co-Executive Director, Emmett Institute on Climate Change and the Environment
Evan Frankel Professor of Policy and Practice
UCLA School of Law