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RE: Request for Investigation Under Title VI of the Civil Rights Act of Florida Forest Service Sugarcane Field Burn Authorization Practices

SUBMITTED VIA EMAIL

Dear Administrator Regan, Secretary Vilsack, Director Dorka, Associate Assistant Secretary Lake Scott, and Chief Stoneman,

Sierra Club's Stop the Burn-Go Green Campaign submits this complaint to respectfully request that, pursuant to Title VI of the Civil Rights Act ("Title VI"), and the regulations thereunder, the U.S. Environmental Protection Agency and the U.S. Department of Agriculture investigate whether the Florida Forest Service's practices authorizing sugarcane field burns when the wind is blowing toward predominantly Black communities, and denying requests for burn

authorizations when the wind is blowing toward largely white communities, fail to comply with the requirements for receipt of federal funding imposed by Title VI. The Florida Forest Service’s administration of these agricultural burn authorizations subjects predominantly Black communities in Florida’s sugar growing region to discriminatory effects by depriving them of protections from the impacts of smoke and ash afforded to largely white communities to the east.

Sierra Club further requests that the Civil Rights Division of the United States Department of Justice (“DOJ”) play a coordinating and oversight role to ensure “the consistent and effective implementation of Title VI across the federal government.”¹

I. Introduction

With regard to sugarcane field burn authorizations, the ongoing practices of the Florida Forest Service (“FFS”) protect largely white communities in eastern Palm Beach County from ash and smoke impacts while failing to protect predominantly Black communities to the west, in parts of Florida’s Everglades region (“Glades”) in Palm Beach County, from those harms. As characterized by U.S. Census data, the communities of Belle Glade, Pahokee, and South Bay are predominantly Black (58–60%), with approximately 10–16% non-Hispanic/Latino white residents.² The eastern Palm Beach County cities, Wellington, Westlake, and Royal Palm Beach, are largely non-Hispanic/Latino white (40–55%), with approximately 11–28% Black residents.³

During the sugarcane harvesting season, which takes place from October through May, residents of these the Glades communities are forced to endure smoke and ash impacts as a result of sugarcane burning that is authorized by the FFS. As detailed below, residents shut their windows and stay indoors to avoid the smoke and ash, keep their children indoors, and report experiences of coughing, itchy eyes, and trouble breathing.⁴ Doctors and nurses have noted the influx of patients to hospitals and clinics complaining of breathing problems during the burning season, and an analysis of hospitalizations and emergency room visits for residents of Belle Glade showed a marked rise during the burn season.⁵

¹ DOJ, Title VI Legal Manual, at Section III (Updated Feb. 3, 2021) (hereinafter “DOJ Title VI Legal Manual”), *available at*: <https://www.justice.gov/crt/fcs/T6manual3#:~:text=Accordingly%2C%20DOJ%20is%20charged%20with%20ensuring%20the%20consistent%20and%20effective%20implementation%20of%20Title%20VI%20across%20the%20federal%20government>.

² *See infra* section IV. A. for detailed demographic information.

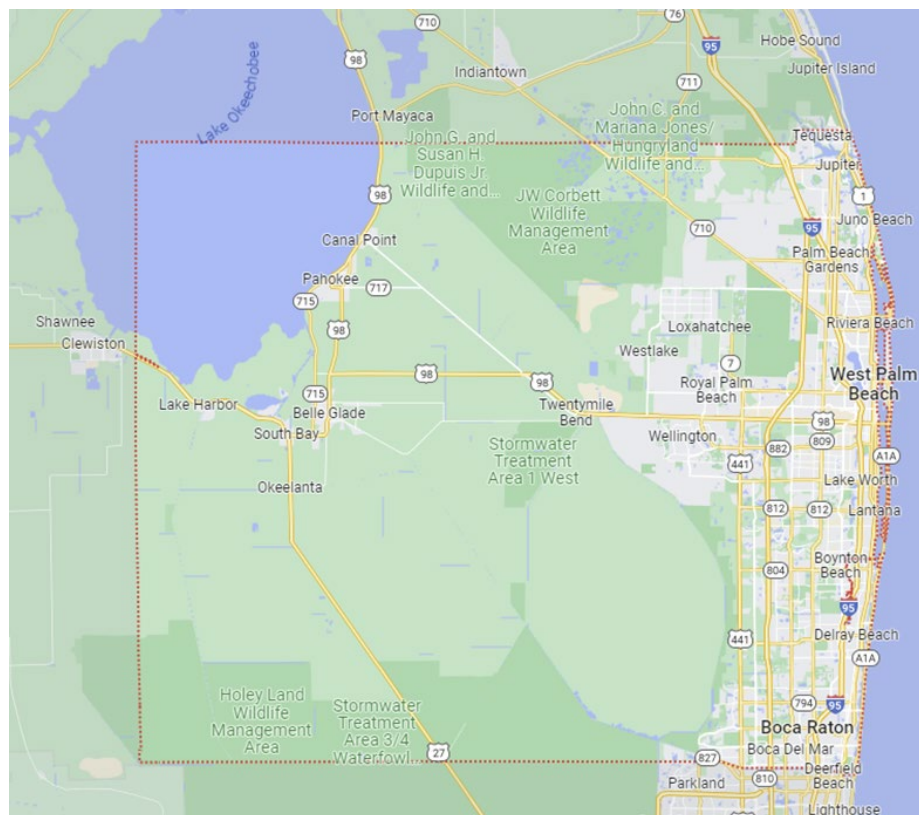
³ *See infra* section IV. A. for detailed demographic information.

⁴ *See infra* section III. A. for details.

⁵ *See infra* section III. A. for details.

In contrast, Palm Beach County communities to the east, such as Royal Palm Beach, Wellington, and Westlake, benefit from FFS practices and policies that stringently prohibit cane burning when the wind direction and speed would allow ash or smoke to reach those cities.

The figures below show the locations of the Glades communities and eastern cities in relation to Florida’s “Sugar Growing Region” (“SGR”), past sugarcane field burn locations, and the boundaries of Palm Beach County.⁶



⁶ The top figures are reproduced from Holly K. Nowell et al., *Impacts of Sugarcane Fires on Air Quality and Public Health in South Florida*, 130 (8) *Environmental Health Perspectives* 087004-1, 087004-2 (Aug. 2022), available at: <https://ehp.niehs.nih.gov/doi/10.1289/EHP9957> (hereinafter “Nowell et al. (2022)”), and included in Attachment 1 – Key Studies. The map below them, depicting the boundary of Palm Beach County, is from Google Maps.

Florida Division of Forestry officials first initiated the practice of providing differential protection to the eastern communities in 1991, and FFS has continued to perpetuate this pattern of practices through the current sugarcane burning season, as FFS officials approve or deny requests for sugarcane field burn authorizations.⁷ In protecting largely white communities from smoke and ash while allowing predominantly Black communities to bear the environmental and health impacts of sugarcane burning, the FFS continues to implement a program that appears to be inconsistent with the requirements imposed on funding under Title VI, and should be investigated.

Title VI of the Civil Rights Act of 1964 provides that “[n]o person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.” EPA and USDA’s implementing regulations prohibit recipients of federal funding from making decisions which have the purpose or effect of subjecting individuals to discrimination because of their race, color, or national origin.

The EPA and USDA provide funding to the Florida Department of Agriculture and Consumer Services, of which FFS is a division, including funds for forest management, and therefore have a responsibility to ensure that the FFS is not engaging in practices inconsistent with the requirements of Title VI. Moreover, federal environmental justice policy directs federal agencies to address environmental injustices to the fullest extent authorized by law.⁸ To fulfill their affirmative environmental justice obligations pursuant to Executive Order 12898, the EPA and USDA must work to remedy discrimination and “ensure the programs [they] fund[] consider disproportionately high adverse human health and environmental effects on minority and low income populations.”⁹

⁷ See *infra* sections III. B. and IV. A. for details.

⁸ Executive Order 12898: “Federal actions to address environmental justice in minority populations and low-income populations,” available at: <https://www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf>; see Environmental Protection Agency, Interim Environmental Justice and Civil Rights in Permitting Frequently Asked Questions (August 2022), available at: <https://www.epa.gov/system/files/documents/2022-08/EJ%20and%20CR%20in%20PERMITTING%20FAQs%20508%20compliant.pdf>.

⁹ *Id.*; U.S. EPA, Title VI and Environmental Justice, available at: <https://www.epa.gov/environmentaljustice/title-vi-and-environmental-justice>.

II. Parties

A. Complainant

Sierra Club is the nation’s oldest grassroots organization. It is a not-for-profit corporation with approximately 34,260 members in Florida and 701,985 members nationwide and is dedicated to the protection and preservation of the environment. **Sierra Club’s Stop the Burn-Go Green Campaign** is a grassroots campaign led by residents directly impacted by pre-harvest sugar field burning living in Palm Beach, Martin, and Glades counties. Stop the Burn-Go Green Campaign organizers have been advocating to end the injustice of pre-harvest sugarcane field burning since 2015. Their advocacy has shone a national spotlight on sugarcane burning and the environmental justice issues it raises. Stop the Burn-Go Green works with local leaders to urge both the sugar industry and regulators in the Florida Department of Agriculture and Consumer Services to phase-out pre-harvest field burning.

B. Federal Funding Recipient

The **FFS** is a division of the Florida Department of Agriculture and Consumer Services (“**FDACS**”). Its mission is to “protect and manage the forest resources of Florida, ensuring that they will be available for future generations.”¹⁰ The FFS manages over 1 million acres of state forests for multiple public uses and administers Florida’s outdoor burning and forest fire laws.¹¹ As described in more detail in section V.B below, EPA and USDA provide grant funds to FDACS, including funds related to forest management and forest program administration.

III. Factual Background

A. Florida’s Sugar Growing Region (“**SGR**”) and Pre-Harvest Cane Field Burning

Florida is the nation’s largest producer of sugarcane.¹² Most of the commercial sugarcane industry in the state is located in South Florida, around the southern shore of Lake

¹⁰ Florida Department of Agriculture and Consumer Services, Florida Forest Service, <https://www.fdacs.gov/Divisions-Offices/Florida-Forest-Service> (last accessed Aug. 20, 2023).

¹¹ *Id.*; see *infra* section III. B.

¹² Florida Leads Nation in Production of Sugarcane, Fla. Farm Bureau (Dec. 10, 2018), <https://www.floridafarmbureau.org/news/florida-leads-nation-in-production-of-sugarcane> (last accessed Aug. 20, 2023).

Okeechobee.¹³ The SGR produces more than half of the nation’s cane sugar and spans 440,000 acres (over 680 square miles) in the Everglades Agricultural Area (EAA) in South Florida.¹⁴ The cities of Belle Glade, South Bay, and Pahokee are in the SGR.¹⁵

Each year, about 10,000 sugarcane fields in the SGR are burned as part of the pre-harvest process for producing sugarcane.¹⁶ The burn season starts in October and ends in May. There are roughly 10,300 sugarcane fires in Florida annually, and 90% of those fires and associated emissions are concentrated in the SGR.¹⁷

For illustrative purposes, the satellite image below shows locations of burned sugarcane fields in the SGR (which appear as black and dark brown rectangles).¹⁸



These agricultural burns blanket communities with smoke, dust, and ash, often referred to as “black snow.”¹⁹ The burning of Florida sugarcane releases pollutants such as particulate

¹³ *Id.*

¹⁴ Lulu Ramadan, *The Smoke Comes Every Year. Sugar Companies Say the Air Is Safe.* The Palm Beach Post and ProPublica (July 2021), available at: <https://projects.propublica.org/black-snow/> (hereinafter “Black Snow Investigation”); Palm Beach County, *Cooperative Extension – Agriculture, Sugar Cane, Rice and Sod*, available at: <https://discover.pbcgov.org/coextension/agriculture/pages/sugarcane.aspx>.

¹⁵ Nowell et al. (2022), *supra* note 6, at 087004-1 (included in Attachment 1 – Key Studies.)

¹⁶ *Id.*

¹⁷ *Id.* at 087004-5.

¹⁸ Satellite image of SGR in January 2021, from: <https://earthobservatory.nasa.gov/images/147881/smoking-sugar-fields-in-south-florida> (last accessed Aug. 17, 2023).

¹⁹Black Snow Investigation, *supra* note 14.

matter (PM), Polycyclic Aromatic Hydrocarbons (PAHs), Volatile Organic Compounds (VOCs), and carbonyls.²⁰ “Sugarcane fires and other biomass burning fires are sources of PM_{2.5}, which is linked to lung and other cancers, cardiopulmonary disease such as ischemic heart disease, and premature death.”²¹ “Chronic exposure to biomass burning, including sugarcane smoke, also has serious nonfatal consequences, including asthma, bronchitis, missed work and school days, and impacts on pregnancy and child development.”²² Researchers have estimated that sugarcane burning emissions for numerous PAHs and carbonyls are substantial relative to the total inventoried emissions for those pollutants tracked for Palm Beach County and for Florida as a whole, including for pollutants such as fluorene, benzo[b]fluoranthene, formaldehyde, and acetaldehyde.²³

A 2022 study estimated “that sugarcane burning is associated with 1–6 deaths per year across South Florida, including 1 death every few years specifically in the sugarcane growing region.”²⁴ “The authors estimated that burning of sugarcane fields in South Florida... produces almost as much PM_{2.5} in 6 months as all the state’s vehicles emit in 1 year.”²⁵

The American Lung Association does not support sugarcane burning due to the negative health and air impacts.²⁶ In June 2020, the Centers for Disease Control and Prevention recommended that regulators consider suspending agricultural burns during the pandemic.²⁷ (Sugar cane burns in Florida continued through that harvest season and subsequent ones without any apparent suspension.)²⁸

²⁰ Danielle Hall et al., *PAHs, carbonyls, VOCs and PM_{2.5} emission factors for pre-harvest burning of Florida sugarcane*, 55 *Atmospheric Environment* 164, 164–172 (2012), available at <https://doi.org/10.1016/j.atmosenv.2012.03.034> (hereinafter “Hall et al. (2012)”) (included in Attachment 1.)

²¹ Nowell et al. (2022), *supra* note 6, at 087004-1 (citing supporting studies).

²² *Id.* (citing studies). Nowell et al. (2022) also explained: “Biomass burning smoke is also linked to serious, nonfatal respiratory and cardiovascular morbidity, including asthma, bronchitis, pneumonia, and chronic obstructive pulmonary disease, as well as low birth weight and increased COVID-19 mortality.” *Id.* (citing studies).

²³ Hall et al. (2012), *supra* note 20, at 170, Table 6.

²⁴ See Oyelola Adegboye, *Field Burning Fallout: Quantifying PM_{2.5} Emissions from Sugarcane Fires*, 130(8) *Environmental Health Perspectives* 084003-1, 084003-1 available at <https://doi.org/10.1289/EHP11533> (discussing Nowell et al. (2022), *supra* note 6) (included in Attachment 1).

²⁵ *Id.* at 084003-2.

²⁶ Patrice Gaines, “In South Florida, ‘Black Snow’ Makes Breathing Difficult for Some Black and Latino Residents.” NBCNews.Com, May 10, 2023, www.nbcnews.com/news/nbcblk/sugar-burning-season-south-florida-rca82479?fbclid=IwAR0r9VDFMhSGWgfonMgXJpCmGH9BGIFmZVC4Ah8Sfaa6bBINuw47HscPQxU.

²⁷ Gilda Di Carli. “Fire Drill - 'They're Killing People by Doing This' -- Why Students at a School 40 Miles from Mar-a-Lago Can't Go Outside.” *Grist* (Aug. 19, 2020) (last updated Oct. 2020), available at: <https://grist.org/justice/the-glades-florida-sugarcane-burn/> (hereinafter “Grist Investigation”).

²⁸ *See id.*

Residents of Belle Glade, South Bay, and Pahokee routinely face periods of extremely poor air quality conditions during the sugarcane burning season.²⁹ As part of an investigation, reporters who spoke with Glades residents, teachers, doctors, nurses, and field workers about their experiences with sugarcane burning found that “[m]any of these accounts paint a picture of a community often left with little choice but to stay indoors to avoid the smoke and ash outside.”³⁰ Parents keep their children home from school to avoid the risk of asthma attacks from increased exposure to the smoke, schools cancel outdoor recess, and residents keep inhalers and nebulizers on hand, stay indoors, and either keep windows closed or, when impossible due to the heat, put makeshift filters over windows to keep the smoke out.³¹ A teacher in Pahokee stated that “the conditions can be unbearable” and described checking on children whose parents “kept them at home because of their asthma and the smoke.”³² One resident described how, following an intense asthma attack, her doctor told her to leave the Glades if she ever wants her breathing to improve, but that she could not because— “I’m like most people here. We can’t leave.”³³ Nurses and doctors described to reporters how burning season “brings an influx of patients complaining of breathing problems to clinics and hospitals.”³⁴

Dr. Seneca Harberger, a clinician in Belle Glade, said patients often come into the clinic complaining that the smoke is aggravating their breathing problems: “Patients absolutely come probably on a daily basis and say their asthma, their COPD [chronic obstructive pulmonary disease] is made worse by the burning.”³⁵ The clinic regularly provides nebulizers to patients.³⁶

Dr. Jean Malecki, “who ran the county health department from 1991 to 2009 and started her career as a clinician in the Glades,” stated: “There was significant observational evidence that the burning of cane caused respiratory problems...I saw first-hand the problems that the people in Belle Glade were facing.”³⁷ She assigned a researcher to study health trends, and by 1992, that researcher concluded that more people were going to local clinics for respiratory

²⁹ Black Snow Investigation, *supra* note 14.

³⁰ *Id.*

³¹ *Id.*

³² *Id.*

³³ *Id.*

³⁴ *Id.*

³⁵ Ramadan, Lulu. “A Complete Failure of the State’: Authorities Didn’t Heed Researchers’ Calls to Study Health Effects of Burning Sugar Cane.” The Palm Beach Post and ProPublica (Mar. 2022), available at: <https://www.palmbeachpost.com/story/news/local/2021/08/19/sugar-cane-burning-researchers-called-black-snow-health-studies/7690883002/> (hereinafter “A Complete Failure of the State”).

³⁶ *Id.*

³⁷ *Id.*

problems during cane-burning season, but he lacked data on emissions to link the trend to pollution at that time.³⁸ (A 2016 study subsequently found that the levels of PAHs in Belle Glade were significantly higher—at times as much as tenfold—compared to a city in a cane-producing region of Brazil known for high levels of air pollution.³⁹ That study prompted researchers to recommend that FFS restrict the amount of burning allowed daily, but that recommendation was never adopted by FFS.⁴⁰)

More recently, a 2021 analysis based on eight years of hospitalization data found that for patients from Belle Glade, hospital and emergency room visits for respiratory illness rose by 35% during the sugarcane burning season.⁴¹

A 2021 project mapping wildfire smoke across the U.S. found that a handful of ZIP codes in Florida’s SGR recorded the worst smoke days in the U.S., and noted that these were areas where pre-harvest burning of sugarcane fields occurred.⁴²

A recent air quality monitoring project conducted by The Palm Beach Post and ProPublica using PurpleAir sensors captured repeated short-term spikes in pollution on days when the state authorized sugarcane burning and projected the smoke would blow toward them.⁴³ Although those spikes lasted less than an hour, “Sheryl Magzamen, a Colorado State University professor who studies the health impact of exposure to environmental toxins and reviewed the news organizations’ analysis, said the short bursts of PM_{2.5} recorded by the PurpleAir sensors in the Glades can have immediate health effects. ‘We’ve seen that spikes in air pollution, even short-term changes, had meaningful impacts on inhaler use, which we take to be signs of asthma and COPD [chronic obstructive pulmonary disease] exacerbation,’ she said,

³⁸ *Id.*

³⁹ *Id.* See also Nima Afshar-Mohajer, Christina Wilson, Chang-Yu Wu & James E. Stormer, *Source apportionment of atmospheric polycyclic aromatic hydrocarbons (PAHs) in Palm Beach County, Florida*, 66(4) *Journal of the Air & Waste Management Association* 377, 382–383 (2016) available at <https://doi.org/10.1080/10962247.2016.1138902> (“In comparison to the atmospheric PAH concentrations measured in a medium-sized city and one of the major sugarcane producers in the world, Araraquara City, São Paulo, Brazil ... the mean concentrations of all PAH compounds were significantly higher (1 to 10 times) at Belle Glade City.”) (hereinafter “Afshar-Mohajer et al. (2016)”) (included in Attachment 1.)

⁴⁰ *Id.* See also Afshar-Mohajer et al. (2016) at 377 (“Results from this study encourage more control for sugarcane burns and help to better manage authorization of the sugarcane burning incidents...”); 382 (suggesting that in light of its findings, “fewer authorized burnings for this period warrant consideration” by FFS and other management authorities); *id.* at 385 (“This study suggests a more refined biomass burning authorization plan to reduce the impact of PAH emissions on the residential areas of West Palm Beach County.”).

⁴¹ A Complete Failure of the State, *supra* note 35.

⁴² Alison Saldanha, *Dangerous Air: We Mapped the Rise in Wildfire Smoke Across America. Here’s How We Did It* (September 28, 2021), <https://insideclimatenews.org/news/28092021/dangerous-air-data-map/?fbclid=IwAR2vKsPflZOHkRqcV75w5lVDwRRsdYTQykn39fc2kjOq7CpdRArl59YXR2Q>.

⁴³ Black Snow Investigation, *supra* note 14.

referring to her past research.”⁴⁴ The Post and ProPublica used automated text messaging to 51 residents across the region to elicit responses in the moments after the sensors picked up spikes in air pollution; the responses from residents described coughing, itchy eyes, and “trouble breathing.”⁴⁵ Health and air-quality researchers said that some of the symptoms residents described aligned with elevated exposure to PM_{2.5}.⁴⁶ Dr. Mark Frampton, a pulmonologist at the University of Rochester who formerly served on the EPA’s Clean Air Scientific Advisory Committee, stated, “I’m not surprised that there would be effects even with shorter-term exposure, especially if the exposures are repeated and recurrent...If you have asthma, that can trigger immediate effects. It doesn’t have to be around for very long at all.”⁴⁷

B. The Florida Forest Service’s Burn Authorization Practices

Florida law vests the Florida Forest Service (“FFS”) with “powers, authority, and duties” that include authority to authorize agricultural burning. Fla. Stat. Ann. § 590.02(1)(i), (10)(a); *id.* § 590.015(1). Regulations state that FFS will set special requirements for all types of burn authorizations “to protect public health and safety.” Fla. Admin. Code Ann. r. 5I-2.006(1).⁴⁸ Such requirements may include “restricting wind direction” and limiting the duration of the burning. *Id.* Burning is prohibited whenever FFS “determines that the fire poses a threat to health, safety, and property protection.” Fla. Admin. Code Ann. r. 5I-2.004(h). Burning is also prohibited “when the [FFS] determines that atmospheric or meteorological conditions indicate improper dispersion of smoke that threatens public health, safety, or general welfare; or which would obscure visibility of vehicular or air traffic[.]” Fla. Admin. Code Ann. r. 5I-2.004(i).⁴⁹ FFS is also authorized to designate areas where burning is restricted to daytime hours only.⁵⁰

All planned fires in Florida require an Open Burn Authorization (“OBA”).⁵¹ Before each burn, “burners”— people who are certified with the state of Florida to conduct such burns—must

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ Fla. Admin. Code Ann. r. 5I-2.006.

⁴⁹ Fla. Admin. Code Ann. r. 5I-2.004.

⁵⁰ “Smoke Sensitive Areas” are areas designated by the Florida Forest Service within which, for reasons of visibility, health or human welfare, smoke could unduly adversely impact public safety e.g., interstates, urban areas, airports, and hospitals. Fla. Admin. Code Ann. r. 5I-2.003(30). In “smoke sensitive areas,” burning is prohibited “between one hour before sunset and 9:00 a.m. the next day. Fla. Admin. Code Ann. r. 5I-2.004(g).

⁵¹ Florida Statute 590.125(3)(b)(4).

use an online portal to enter information about the burn, indicate the burn location on a map, generate the projected smoke plume for the burn on a map, and then submit the request.⁵² The FFS staff then reviews the requests and approves or denies them.⁵³

FFS officials' decision-making process for approving or denying each individual burn application is opaque—records of denials are only available through public records requests, and even in those records, officials seldom articulate a clear explanation for the denial.⁵⁴

In 2019, a document titled “Florida Forest Service, *Procedures for Burning Sugarcane* (Sept. 30, 2019)” was filed as an exhibit in *Coffie v. Florida Crystals Corporation*, Case No. 19-80730-CIV-Smith (S.D. Florida); in that document, FFS seemingly memorialized its then-current internal policies or practices for deciding whether to approve requests for burn authorizations.⁵⁵

That document described FFS's practices of denying authorization for sugarcane burning in the region affecting cities such as Royal Palm Beach and Wellington whenever wind conditions would disperse smoke eastward, toward those communities. Specifically, that document shows that in the area designated as “Zone I,” no cane burning would be allowed if surface or transport winds came from the NNW, NW, W, SW, or SSW—in short, any direction that would send smoke eastwards. And for burning within “Zone II” areas (the zone immediately west of Zone I), burning would require special authorization for winds from the NW, W, or SW, and be prohibited if such winds were at speeds over 9 miles per hour—again, apparently prohibiting burns under those wind conditions where the plumes could reach those eastern communities in Zone I. Similarly, for Zone III areas (the zone immediately west of Zone II), special authorization would be required for Zone III South for winds from the NW, W, or SW if wind speeds exceeded 12 miles per hour, and for Zone III North for winds from the W or NW above that speed—again, apparently restricting burns under wind conditions where the plumes could reach eastern communities.

⁵² Web-Based Open Burn Authorization Request (WebOBA), Florida Forest Service, available at: <https://www.fdacs.gov/Forest-Wildfire/Wildland-Fire/Resources/Fire-Tools-and-Downloads/Web-Based-Open-Burn-Authorization-Request-WebOBA>.

⁵³ *Id.*

⁵⁴ See Attachment 2 – FFS Spreadsheets Showing Burn Authorization Denials from October 2022 through May 2023.

⁵⁵ See 2019 WL 8503588 (S.D.Fla.); Attachment 3 – 2019 Description of FFS Burn Authorization Practices (*Coffie v. Florida Crystals Corporation*, 9:19-cv-80730-RS, ECF Docket No. 81-2, “Exhibit B” (filed Oct. 18, 2019)) (obtained from pacer.gov).

In 2020, Sierra Club organizer Patrick Ferguson filed a records request under Florida state law to the Florida Department of Agriculture and Consumer Services seeking information about modifications to those internal practices or policies; on January 7, 2021, the agency provided a new map of the “zones” and a description of the policies for each zone.⁵⁶

Although the boundaries for the zones had been reconfigured, the documents showed the FFS continuing its practice of denying authorizations for burning when the wind direction and speed could result in smoke or ash plumes reaching the eastern communities of Wellington and Royal Palm Beach. In all zones, burns are prohibited when dispersion indices are 20 or below or when the Air Quality Index is forecasted to be 101 or greater, and backing fires are required if dispersion indices range from 21-25, but, critically, each zone has different restrictions and/or prohibitions on sugarcane burning based on wind speed and direction. As shown in the attached figure from those documents,⁵⁷ Zone I (referred to as Zone 1 on FFS’s map of the zones) lies outside of the SGR to the east. It has the most stringent burn restrictions—sugarcane burns in Zone I are prohibited entirely whenever the wind blows toward the east, at any speed.⁵⁸

Zone II spans the easternmost portion of the SGR, and is divided into a north area and a south area. Zone II North encompasses much of the area that lies between the three Glades cities and the eastern cities. In Zone II North (labeled “Zone 2N” on the FFS map), burns are prohibited when the wind blows in most eastward directions and the wind speed is greater than 10 miles per hour.⁵⁹ In Zone II South (“Zone 2S”), burns are prohibited when the wind blows in eastward directions and the wind speed is greater than 12 miles per hour.⁶⁰

⁵⁶ Attachment 4 – 2020/2021 Description of FFS Burn Authorization Practices.

⁵⁷ *See id.*

⁵⁸ *See id.*

⁵⁹ The Zone II North guidelines allow burns when the wind blows to the North Northeast. *Id.*

⁶⁰ The Zone II South guidelines also prohibit burns when the wind blows toward the Northwest and North Northwest and the wind speed is greater than 12 miles per hour. *Id.*

ZONE II NORTH AREA

CANE BURNING ALLOWED WITH WINDS FROM:		IF SURFACE OR TRANSPORT WINDS FROM:	
North	N	Southwest	SW
Northeast	NE	West	W
East	E	Northwest	NW
Southeast	SE	North Northwest	NNW
South	S	West Northwest	WNW
South Southwest	SSW	West Southwest	WSW
East Northeast	ENE		
East Southeast	ESE		
North Northeast	NNE		
South Southeast	SSE		
Backing Fire must be used if dispersion indices range from 21-25.		Cane burning allowed if winds are less than 10 miles per hour and only backing fires allowed.	
NO BURNING allowed if dispersion indices are 20 or below or when the Air Quality Index is forecasted to be 101 or greater.			

ZONE II SOUTH AREA

CANE BURNING ALLOWED WITH WINDS FROM:		IF SURFACE OR TRANSPORT WINDS FROM:	
North	N	Southwest	SW
Northeast	NE	West	W
East	E	Northwest	NW
South	S	South Southwest	SSW
East Northeast	ENE	North Northwest	NNW
East Southeast	ESE	West Southwest	WSW
North Northeast	NNE	West Northwest	WNW
		Southeast	SE
		South Southeast	SSE
Backing Fire must be used if dispersion indices range from 21-25.		Cane burning allowed if winds are less than 12 miles per hour and only backing fires allowed.	
NO BURNING allowed if dispersion indices are 20 or below or when the Air Quality Index is forecasted to be 101 or greater.			

In Zones III through VI, there are no burn prohibitions based on wind direction or speed.⁶¹ Zone III encompasses the most southern part of the SGR, and there are no wind direction or wind speed restrictions.⁶²

ZONE III

NO WIND DIRECTION OR WIND SPEED RESTRICTIONS
Backing Fire must be used if dispersion indices range from 21-25.
NO BURNING allowed if dispersion indices are 20 or below or when the Air Quality Index is forecasted to be 101 or greater.

⁶¹ *Id.*

⁶² *Id.*

Zones IV and V are in the center of the SGR, and contain the cities of Belle Glade, Pahokee, and South Bay.⁶³ There are only very limited restrictions in these zones: in Zone IV, a backing fire may be required based on wind speed and direction, and in Zone V, a backing fire may be required based on wind speed alone.⁶⁴

ZONE IV

CANE BURNING ALLOWED WITH WINDS FROM:		IF SURFACE OR TRANSPORT WINDS FROM:	
North	N	Southwest	SW
Northeast	NE	East Southeast	ESE
Northwest	NW	South	S
East	E	Southeast	SE
West	W	South Southeast	SSE
North Northeast	NNE	South Southwest	SSW
North Northwest	NNW	West Southwest	WSW
East Northeast	ENE		
West Northwest	WNW		
Backing Fire must be used if dispersion indices range from 21-25.		If winds are 12 miles per hour or greater, then a backing fire must be used.	
NO BURNING allowed if dispersion indices are 20 or below or when the Air Quality Index is forecasted to be 101 or greater.			

ZONE V

<p>BURNING ALLOWED WITH ANY WIND DIRECTION. WIND SPEEDS GREATER THAN 15 MILES PER HOUR REQUIRES USE OF BACKING FIRE.</p> <p>Backing Fire must be used if dispersion indices ranger from 21-25.</p> <p>NO BURNING allowed if dispersion indices are 20 or below or when the Air Quality Index is forecasted to be 101 or greater.</p>
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Zone VI encompasses the northern part of the SGR, and there are no wind direction or wind speed restrictions.⁶⁵

ZONE VI

<p>NO WIND DIRECTION OR WIND SPEED RESTRICTIONS</p> <p>Backing Fire must be used if dispersion indices range from 21-25.</p> <p>NO BURNING allowed if dispersion indices are 20 or below or when the Air Quality Index is forecasted to be 101 or greater.</p>
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⁶³ See Attachment 4 – 2020/2021 Description of FFS Burn Authorization Practices.

⁶⁴ *Id.*

⁶⁵ *Id.*

The FFS practices of providing stringent protection from smoke and ash plumes only to eastern communities originated in 1991, when the Florida Department of Agriculture’s Division of Forestry developed new policies in response to complaints from those eastern communities.⁶⁶ Prior to that time, the Division of Forestry issued blanket permits to sugar growers for entire seasons that imposed recording and reporting requirements, rather than limitations on the burns.⁶⁷ But complaints from the urban coastal population increased as development in those areas spread westward, closer to agricultural areas.⁶⁸ In response to receiving 40 to 50 such complaints in 1990-1991, and additional complaints sent via the Governor’s Office and to U.S. Senator Bob Graham, Forestry officials were spurred to act and developed new policies unveiled in October of 1991.⁶⁹ These complaints came from residents from eastern communities such as Wellington and Royal Palm Beach, who complained of sore throats, coughing, and breathing problems when the wind brought smoke from sugar cane burns their way.⁷⁰ According to census data, in 1990 approximately 89.3% of the population in Wellington was white (not of Hispanic origin), and 83.5% of the population of Royal Palm Beach village was white (not of Hispanic origin).⁷¹ In contrast, the population of Belle Glade city in 1990 was approximately 58% Black, 31.4% “white of Hispanic origin,” and 10.2% white (not of Hispanic origin), and Belle Glade camp was about 98% Black.⁷² Pahokee city was about 55% Black, 24.5% white (not of Hispanic origin), and 35% “white of Hispanic origin.”⁷³ South Bay “city” was 61.9% Black, 8.3% “white (not of Hispanic origin),” and 22% “white of Hispanic origin.”⁷⁴

⁶⁶ Belinda Brockman, *West Winds Will Activate Burning Ban New Rules for Cane Growers*, Palm Beach Post (Oct. 11, 1991), 1991 WLNR 1260652 (West Law Access Number).

⁶⁷ Lucy Morgan, *Burned Up: Sugar Cane Fight Peaks*, St. Petersburg Times (Nov. 4, 1991), 1991 WLNR 1960426 (West Law Access Number).

⁶⁸ Belinda Brockman, Mary McLachlin, and Lisa Shuchman, *Cane Burning Curbed to Reduce Ash, Soot in the Skies*, Palm Beach Post (Oct. 8, 1991), 1991 WLNR 1223536 (West Law Access Number).

⁶⁹ *Id.*

⁷⁰ Black Snow Investigation, *supra* note 14; Antigone Barton and Hannah Morse, *Glades residents left behind: Nikki Fried’s ‘changes’ to cane burning served only Big Sugar*, Palm Beach Post (Aug. 11, 2022), <https://www.palmbeachpost.com/in-depth/news/local/2022/08/11/cane-burning-nikki-frieds-historic-changes-served-only-big-sugar/10030576002/>.

⁷¹ U.S. Department of Commerce, 1990 Census of Population General Population Characteristics Florida, Section 1, (1990- CP-1-11), Table 6 at 80, 91, available at <https://www2.census.gov/library/publications/decennial/1990/cp-1/cp-1-11-1.pdf>.

⁷² *Id.* Table 6 at 33.

⁷³ *Id.* Table 6 at 73.

⁷⁴ *Id.* Table 6 at 84.

In response to the complaints from the eastern communities, the 1991 Forestry Division policies restricted burning when the wind was coming from the west, except for burning in areas nearest to Lake Okeechobee, with the most stringent restrictions on fires in areas closest to the east coast.⁷⁵ In 1991, a Florida Department of Agriculture official stated that the new wind-direction based policies to protect eastern communities were put in place “to eliminate the potential problems for people having to breathe the ash and deal with stuff falling on their cars and in their swimming pools.”⁷⁶

In the wake of the new policies protecting eastern communities, state regulators continued to receive complaints about the impact of ash and smoke from cane field burns. Yet these complaints did not result in action to provide residents of the Glades with the same stringent protections provided to largely white eastern communities. In 1992, Department of Agriculture/Forestry officials purportedly still received 18 complaints during the cane burning season.⁷⁷

In the years following a 2009 study of air quality, residents from sugar-producing counties in Florida complained about the impacts from burns dozens of times, some describing nauseating smells, itchy eyes, or chest tightness, others complaining of the soot coating their homes.⁷⁸ The local health department routinely forwarded these complaints, including the health complaints, to the FFS, but FFS staff closed the complaints on the grounds that the burns had been authorized, or that the smoke had since dissipated.⁷⁹

In addition, local organizers have met with FFS leadership to urge them to change the sugarcane burn program; hosted rallies and educational webinars to mobilize community members; and raised awareness about the severe impacts of sugarcane burning.⁸⁰ Most recently, Stop The Burn-Go Green Campaign advocates led a rally outside Florida Crystals corporate headquarters to protest the start of the 2022–23 harvest season on October 1, 2022.⁸¹ Despite

⁷⁵ Belinda Brockman, *West Winds Will Activate Burning Ban New Rules for Cane Growers*, Palm Beach Post (Oct. 11, 1991), 1991 WLNR 1260652 (West Law Access Number).

⁷⁶ Black Snow Investigation, *supra* note 14.

⁷⁷ *Cooperate, Don't Litigate*, Palm Beach Post (Apr. 6, 1992), 1992 WLNR 1353103 (Westlaw Access Number).

⁷⁸ A Complete Failure of the State, *supra* note 35.

⁷⁹ *Id.*

⁸⁰ Stop the Burn, “Our Campaign: Speaking Truth to Power,” available at: <https://stopsugarburning.org/stop-the-burn/#speakingtruth>.

⁸¹ Chris Persaud, ‘Get off our lungs!’: 60 rally against sugar-cane burning in Glades, Palm Beach Post (Oct. 1, 2022), <https://www.palmbeachpost.com/story/news/2022/10/01/glades-residents-rally-against-sugar-cane-burning-harvest/8152806001/>.

years of community advocacy, the FFS has not taken any action to meaningfully change its sugarcane burn authorization practices.

In 2019, and again in 2020, then Florida Department of Agriculture and Consumer Services (FDACS) Commissioner Nikki Fried announced changes to its implementation of the sugarcane field burn authorization practices, which the FFS claimed would minimize the harmful impacts from sugar burning.⁸² However, as detailed above the changes did not prohibit burns when the wind blows toward predominantly Black communities in the sugar growing region, and residents say the changes “did little to alleviate the impact of the smoke reaching the neighborhoods.”⁸³ Some of the changes “reworded” existing requirements “with minor adjustments, and none had binding authority.”⁸⁴ Fried announced that sugarcane growers would need a two-field buffer zone from wildlands when burning on dry, windy days; would not be permitted to burn on foggy mornings or at night without permission; and would have less time to contain underground muck fires.⁸⁵ But, as discussed above, the records released to Sierra Club in 2021 documenting FFS’s current practices show that these minor changes did not alter the fundamental FFS practice of stringently protecting largely white eastern communities in Palm Beach County from smoke and ash plumes while failing to protect predominantly Black communities in Palm Beach County from the impacts of smoke and ash due to cane field burns.

C. Impacts on Communities in the SGR from Pre-Harvest Cane Field Burning Are Avoidable

Green harvesting is a practical and safe alternative to pre-harvest cane field burning. Most major sugar-producing countries outside of the United States, including India, Brazil, and Thailand, have banned or significantly restricted the burning of sugar fields due to the negative public health impacts.⁸⁶ Instead of burning the sugarcane fields, growers use a mechanical harvesting process known as “green harvesting,” which harvests the stalks with their leaves and

⁸² Black Snow Investigation, *supra* note 14.

⁸³ *Id.*

⁸⁴ Antigone Barton and Hannah Morse, *Glades residents left behind: Nikki Fried’s ‘changes’ to cane burning served only Big Sugar*, Palm Beach Post (Aug. 11, 2022), <https://www.palmbeachpost.com/in-depth/news/local/2022/08/11/cane-burning-nikki-frieds-historic-changes-served-only-big-sugar/10030576002/>.

⁸⁵ Forrest Saunders, “Florida AG Commissioner Changes Rules for Prescribed Burns, Targets Sugarcane Growers.” ABC Action News Tampa Bay (WFTS), ABC Action News Tampa Bay (WFTS) (Oct. 2019), available at: <https://www.abcactionnews.com/news/state/florida-ag-commissioner-changes-rules-for-prescribed-burns-targets-sugarcane-growers>.

⁸⁶ Black Snow Investigation, *supra* note 14.

tops intact, thereby avoiding the negative public health consequences associated with pre-harvest burning.⁸⁷ Where green harvesting is practiced, sugarcane “trash” is either left on the soil to be used as mulch, or is separated and collected to be utilized along with bagasse (the waste product left over after sugarcane refining) to produce electricity, biofuels, biochar, tree-free paper products, cattle feed, and more.⁸⁸ A 2017 study found no statistically significant differences in pre-harvest burned versus green harvested sugarcane with regard to final sugarcane yield, sucrose concentration, and sugar yield for study areas in Florida.⁸⁹

A sugar field burning in the SGR.⁹⁰



Green harvesting of a sugar field.⁹¹



⁸⁷ *Id.*

⁸⁸ See, e.g., R.G. Quirk, et al., *Utilization of Biochar in Sugarcane and Sugar-Industry Management*, 12(4) Sugar Tech 321, 321 (2012) (“The thermal conversion, via a slow pyrolysis process, of cane residues such as green harvest trash and bagasse can produce thermal or electrical energy as well as biochar.”); José Goldemberg, et al., *The sustainability of ethanol production from sugarcane*, 36 Energy Policy 2086, 2086-2097 (2008); Thomas J. Rainey and Geoff Covey, (2016). *Pulp and paper production from sugarcane bagasse*. In *Sugarcane-Based Biofuels and Bioproducts* (eds I.M. O'Hara and S.G. Mundree). <https://doi.org/10.1002/9781118719862.ch10>; A. Egeskog,, et al., *Integrating bioenergy and food production—A case study of combined ethanol and dairy production in Pontal, Brazil*, 15(1) Energy for Sustainable Development 8, 8-16 (2011) <https://doi.org/10.1016/j.esd.2011.01.005>.

⁸⁹ Hardev S. Sandhu, et al., *Harvest management effects on sugarcane growth, yield and nutrient cycling in Florida and Costa Rica*, 214 Field Crops Research 253, 253 (2017), available at <http://dx.doi.org/10.1016/j.fcr.2017.09.002>.

⁹⁰ Image from Pro Publica’s Black Snow Investigation, *supra* note 14.

⁹¹ Image from Stop the Burn’s website, <https://stopsugarburning.org/green-harvesting-solution/#harvesting>.

IV. Florida Forest Service’s Practices and Policies for Authorization of Sugarcane Field Burns Subject Predominantly Black Communities to Smoke and Ash While Protecting Largely White Communities from Such Impacts

The FFS’s practice of authorizing sugarcane burns when the wind will blow smoke and ash in the direction of the Glades communities and denying burn requests when the wind would blow the same pollution toward largely white eastern communities has apparent discriminatory effects. EPA and USDA, as federal agencies providing funding to FDACS, should engage in a cumulative assessment of the evidence to determine whether FFS’s practices are inconsistent with requirements on funding imposed under Title VI and its implementing regulations.

A. Florida Forest Service’s Actions Have Discriminatory Effects on Predominantly Black Communities

The FFS’s sugarcane burn authorization decisions have a disproportionate and discriminatory effect on predominantly Black communities in Palm Beach County. Discriminatory effects that disproportionately burden people of a particular race are often “probative of why the action was taken in the first place.”⁹² FFS policies and practices result in FFS denying burn authorizations when the negative impacts of the burns would be imposed on largely white communities in eastern Palm Beach County.⁹³ As a result, smoke from sugarcane burns rarely reaches those communities.⁹⁴ In contrast, the FFS routinely authorizes burns when the impacts from smoke plumes will fall upon predominantly Black communities. Moreover, as detailed below, burns that are denied authorization by FFS when the wind is blowing toward the eastern communities are subsequently approved by FFS at the same location when the wind is blowing the plume of smoke or ash toward South Bay, Pahokee, or Belle Glade. Thus, in selectively protecting the largely white eastern communities in Palm Beach County, FFS practices have the effect of shifting additional impacts to the predominantly Black communities to the west.

The charts below summarize the current racial and ethnic composition of the populations in the eastern cities, which receive stringent protections from smoke and ash impacts, compared to cities in the adjacent portion of the SGR in the same county (Palm Beach County), where residents routinely are subjected to those harms.

⁹² *Reno v. Bossier Parish School Bd.*, 520 U.S. 471, 487 (1997).

⁹³ See Attachment 4 – 2020/2021 Description of FFS Burn Authorization Practices.

⁹⁴ Black Snow Investigation, *supra* note 14.

Demographic Information from Census.gov⁹⁵

Ethnicity and Race	Western Cities (Glades communities)			Eastern Cities (Coastal communities)		
	Belle Glade	Pahokee	South Bay	Wellington	Westlake	Royal Palm Beach
“Black or African American”	60.2%	57.9%	57.8%	11.1%	17.3%	28.0%
“Hispanic or Latino”	29.9%	28.7%	22.6%	27.9%	35.7%	24.7%
“White...not Hispanic or Latino”	10.2%	12.9%	15.8%	55.5%	40.1%	42.1%

⁹⁵ Population estimates by race/ethnicity for Belle Glade, Pahokee, Wellington, Royal Palm Beach from <https://www.census.gov/quickfacts> (last accessed Aug. 2, 2023); Census information for South Bay from 2021: ACS 5-year Estimates Detailed Tables, at <https://data.census.gov/table?q=South+Bay+city,+Florida&g=160XX00US1276417&tid=ACSDT5Y2021.B03002> (last accessed Aug. 3, 2023); Census information for Westlake from 2021: ACS 5-year Estimates Detailed Tables, at <https://data.census.gov/table?q=Westlake+city,+Florida&g=160XX00US1276417&tid=ACSDT5Y2021.B03002> (last accessed Aug. 4, 2023).

Demographic Information from EPA’s EJScreen Reports⁹⁶

Ethnicity/Race	Palm Beach County	Western Cities (Glades communities)			Eastern Cities (Coastal communities)		
		Belle Glade	Pahokee	South Bay	Wellington	Westlake	Royal Palm Beach
“Black”	19%	62%	58%	55%	11%	17%	28%
“Hispanic” ⁹⁷	23%	27%	27%	25%	28%	36%	24%
“White”	65%	26%	24%	33%	70%	51%	57%
“People of Color”	47%	90%	86%	83%	45%	60%	58%

As shown in the tables above, Belle Glade, Pahokee, and South Bay are communities where the majority of the population is Black, and people of color comprise over 80% of the population, whereas in Wellington, Westlake, and Royal Palm Beach, over 40% of the population is described as “white... not Hispanic or Latino,” according to census data. The three Glades communities are predominantly Black (58–60%), with approximately 10–16% non-Hispanic or Latino white residents.⁹⁸ The eastern cities are largely non-Hispanic or Latino white (40–55%), with approximately 11–28% Black residents.⁹⁹

⁹⁶ The data in this chart is from the EJScreen Community Reports for Palm Beach County, Belle Glade, Pahokee, South Bay, Wellington, Westlake, and Royal Palm Beach. United States Environmental Protection Agency, 2023 version, EJScreen Community Reports, available at: <https://ejscreen.epa.gov/mapper> (last accessed Aug. 2, 2023 or 3, 2023, as shown on each report) [See Attachment 5 – EJScreen Reports]. All demographic indicators in EJScreen Community Reports are from Census Bureau’s ACS 2017-2021 5-year Summary (ACS 2021). U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, EJScreen Change Log, available at: <https://www.epa.gov/ejscreen/ejscreen-change-log#juneinterface>, (last accessed Aug. 3, 2023).

⁹⁷ According to the EPA EJScreen Reports, “Hispanic population can be of any race.” See Attachment 5 – EJScreen Reports.

⁹⁸ See table above, “[Demographic Information from Census.gov.](#)”

⁹⁹ *Id.*

The figure below illustrates how FFS policies and practices related to wind direction and speed, as memorialized by FFS in 2020, selectively protect Wellington, Westlake, and Royal Palm Beach while failing to provide equivalent protection to Belle Glade, Pahokee, and South Bay.

Illustration of Impact of FFS Practices for Each Zone on Communities¹⁰⁰



The red arrows in the figure above show the wind directions for which burns are prohibited based on wind direction or wind direction and speed in the zones where those prohibitions apply. The purple lines show the approximate boundaries of the zones described in records released by FFS.¹⁰¹ In Zone 1, which includes the most eastern edge of the sugar growing region, and encompasses the eastern cities, sugarcane burns are prohibited when the wind is blowing toward Westlake, Royal Palm Beach, or Wellington (the “eastern cities”). In Zone 2N, which encompasses a large portion of the sugar growing region lying between the cities of Pahokee, Belle Glade, and South Bay, and the cities of Westlake, Royal Palm Beach, or Wellington, sugarcane burns are prohibited when the wind direction is blowing toward the eastern

¹⁰⁰ This illustration was created by superimposing the approximate boundaries for the zones shown in FFS’s zone map (thick purple lines), *see* Attachment 4, onto a map generated by Google Maps, adding the approximate boundary of the SGR identified in Nowell et al. 2022 (dashed black lines), highlighting the communities of South Bay, Belle Glade, and Pahokee in red, and adding clusters of arrows to depict FFS burn denial practices based on wind direction, described in Attachment 4.

¹⁰¹ *See* Attachment 4.

cities and the wind speed is equal to or greater than 10 miles per hour, but are not similarly prohibited for the wind directions toward Pahokee, Belle Glade, or South Bay.

Zones 4 and 5, which encompass Pahokee, Belle Glade, and South Bay, do not have analogous restrictions to prohibit burns when the smoke or ash plumes could reach those communities.

To assess the impact of FFS burn authorization practices, Sierra Club staff examined screenshots of ash and smoke plume maps for authorized burns generated by an online viewer provided by FFS/FDACs, which allows the public to view the active plumes occurring that day for FFS-authorized burns.¹⁰² Sierra Club staff had captured screenshots of these plume maps on a number of days during January through May of 2023.¹⁰³ Sierra Club staff also examined documents provided by FFS/FDACs—in response to a records request asking for the wind direction and speed information used by FFS to make decisions regarding burn authorizations—to assess the wind direction associated with each day for which Sierra Club had captured a map showing the plumes for FFS-authorized burns.¹⁰⁴ Sierra Club staff had captured the FFS/FDACs burn viewer-generated maps on a total of 66 days. Of those, there were 65 days for which wind direction information was available from FFS records, and on 63 of those days, FFS authorized burns in Palm Beach County.¹⁰⁵ On 45 of 63 days (~71%), the available plume maps showed smoke and/or ash plumes from authorized burns in Palm Beach County overlapping with the communities of Belle Glade, South Bay, or Pahokee.¹⁰⁶ In contrast, the maps showed plumes reaching Westlake, Wellington, or Royal Palm Beach from authorized burns only on 3 of 63 days (~5%).¹⁰⁷

Even considering only the authorized burns in Zone 2N of Palm Beach County, the plume maps showed plumes overlapping the communities of Belle Glade, South Bay, or Pahokee on 16 of 63 days, compared to only 3 days for Westlake, Wellington, or Royal Palm Beach.¹⁰⁸

Thus, plumes from burns authorized in the zone encompassing the portion of the sugar growing region lying between the Glades communities and eastern cities appeared to

¹⁰² The FDACS/FFS online viewer is available at fireinfo.fdacs.gov/fmis.dataviewer (last accessed July 31, 2023).

¹⁰³ Sierra Club staff had captured the screenshots haphazardly rather than in any systematic manner, and did not collect screenshots for every day during the 2023 portion of the burn season.

¹⁰⁴ See Attachment 6 – FFS Wind Direction Spreadsheets for Palm Beach County and Martin County

¹⁰⁵ See Attachment 7 – Sierra Club Analysis of Plume Maps for FFS Authorized Burns

¹⁰⁶ See Attachment 7 – Sierra Club Analysis of Plume Maps for FFS Authorized Burns.

¹⁰⁷ See *id.*

¹⁰⁸ See *id.*

overlap the predominantly Black Glades communities about 5.3 times more frequently¹⁰⁹ than the largely white eastern communities.

This difference cannot be explained away by winds blowing toward the Glades communities more frequently. For the 63 days examined, the proportion of days for which the wind direction in Palm Beach County blew in directions with east to west components (i.e. toward the Glades communities) to the days when the wind direction blew with west to east components (i.e. toward the eastern cities), was 38 to 20, or approximately 1.9.¹¹⁰ And for the entire period of 127 days spanning the first day for which a plume map had been captured (January 24, 2023) and the last (May 30, 2023), for which there was also FFS records regarding wind direction information, the same ratio (days with components blowing to the west over days with components blowing to the east) was approximately 1.7.¹¹¹ Thus, communities in the Glades were overlapped by plumes from burns authorized in Zone 2N more frequently than the eastern cities at a proportion more than double¹¹² what would be expected based solely on the winds blowing toward the Glades more frequently than toward the eastern cities.

Moreover, on a number of days, the available plume maps for approved burns indicate that FFS approved burns when the plumes would overlap with one or more of the Glades communities shortly after denying authorization for a burn at the same location on a prior day when the wind direction was toward Wellington, Westlake, or Royal Palm Beach.¹¹³ For example, on January 23, 2023, a day when the FFS spreadsheet indicates transport winds blowing from the northwest at 15 miles per hour in Palm Beach County, FFS denied burn authorizations at two locations in Zone 2N. The next day, January 24th, FFS plume maps indicate that FFS approved burns from what appear to be the same two locations, when the plume maps show smoke and/or ash from those burns overlapping with Pahokee. The figure below shows approximate denial locations from January 23rd superimposed as blue pins on the FFS/FDACs-

¹⁰⁹ $16 \div 3$ is approximately 5.33.

¹¹⁰ See Attachment 7 – Sierra Club Analysis of Plume Maps for FFS Authorized Burns.

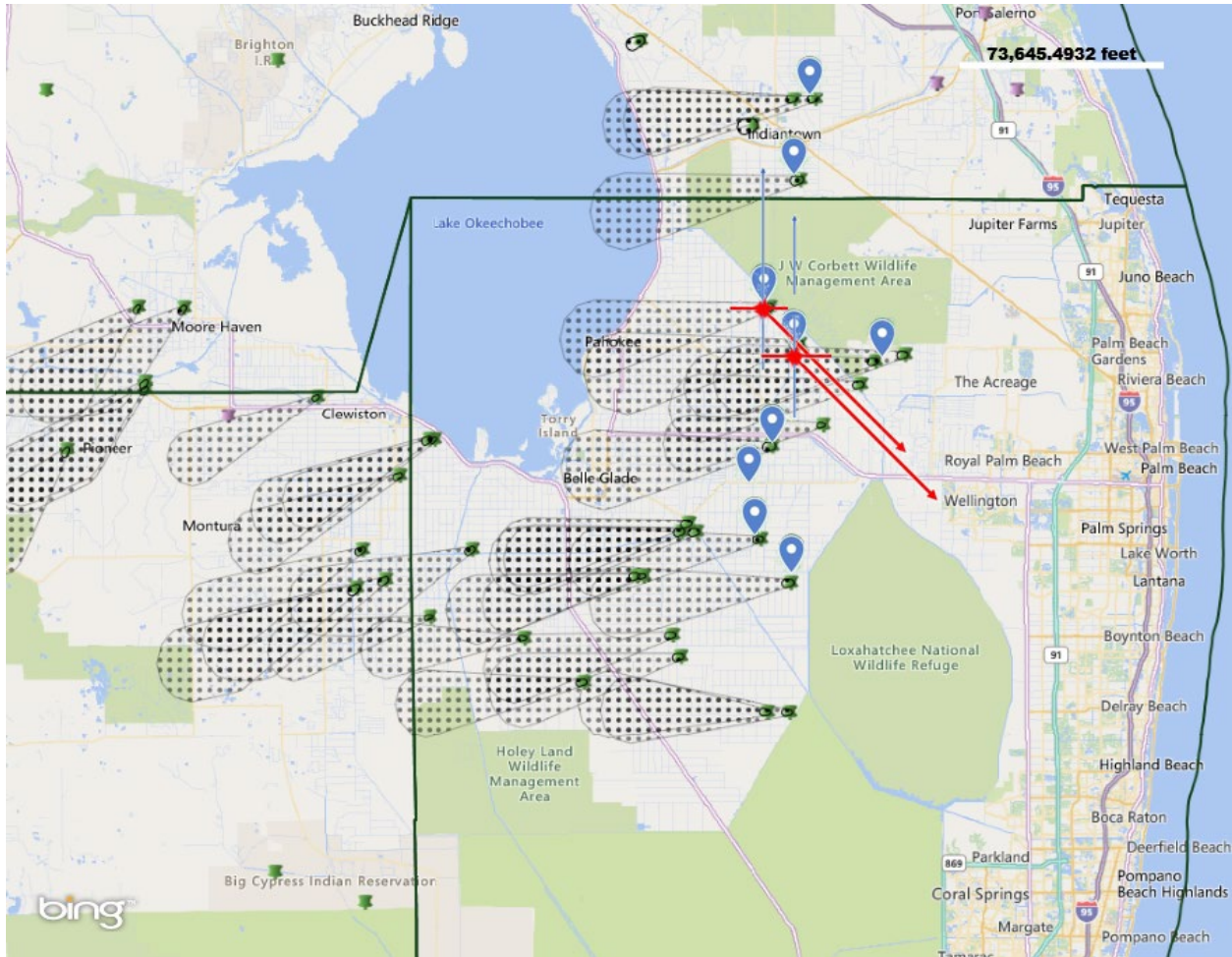
¹¹¹ See Attachment 8 – Sierra Club Analysis of FFS Wind Direction Records.

¹¹² $5.33 \div 1.9$ is approximately 2.8.

¹¹³ Sierra Club requested records from FFS regarding its denials of burn authorizations. FFS provided records indicating the latitude and longitude coordinates for proposed burn locations for which FFS had denied authorizations, and the date of the denial. See Attachment 2. Sierra Club staff used that information to map the locations of the proposed burns for which FFS denied approval, and used the information provided by FFS in Attachment 6 to determine the wind direction associated with denial and approval dates. Plume maps obtained from the FDACS/FFS burn viewer are in Attachment 7.

burn viewer map of authorized burn plumes for January 24th.¹¹⁴ The red arrows show the transport wind direction provided by FFS for January 23rd,¹¹⁵ and indicate that the wind was blowing toward the eastern cities on January 23rd, when FFS denied approval for the burns. Thus, two burns that were denied when the wind was blowing toward the eastern cities were apparently approved the next day, when the wind changed direction, blowing the plumes toward Pahokee instead.

January 23rd Burn Denials Superimposed on January 24th Approved Burn Plumes Map:

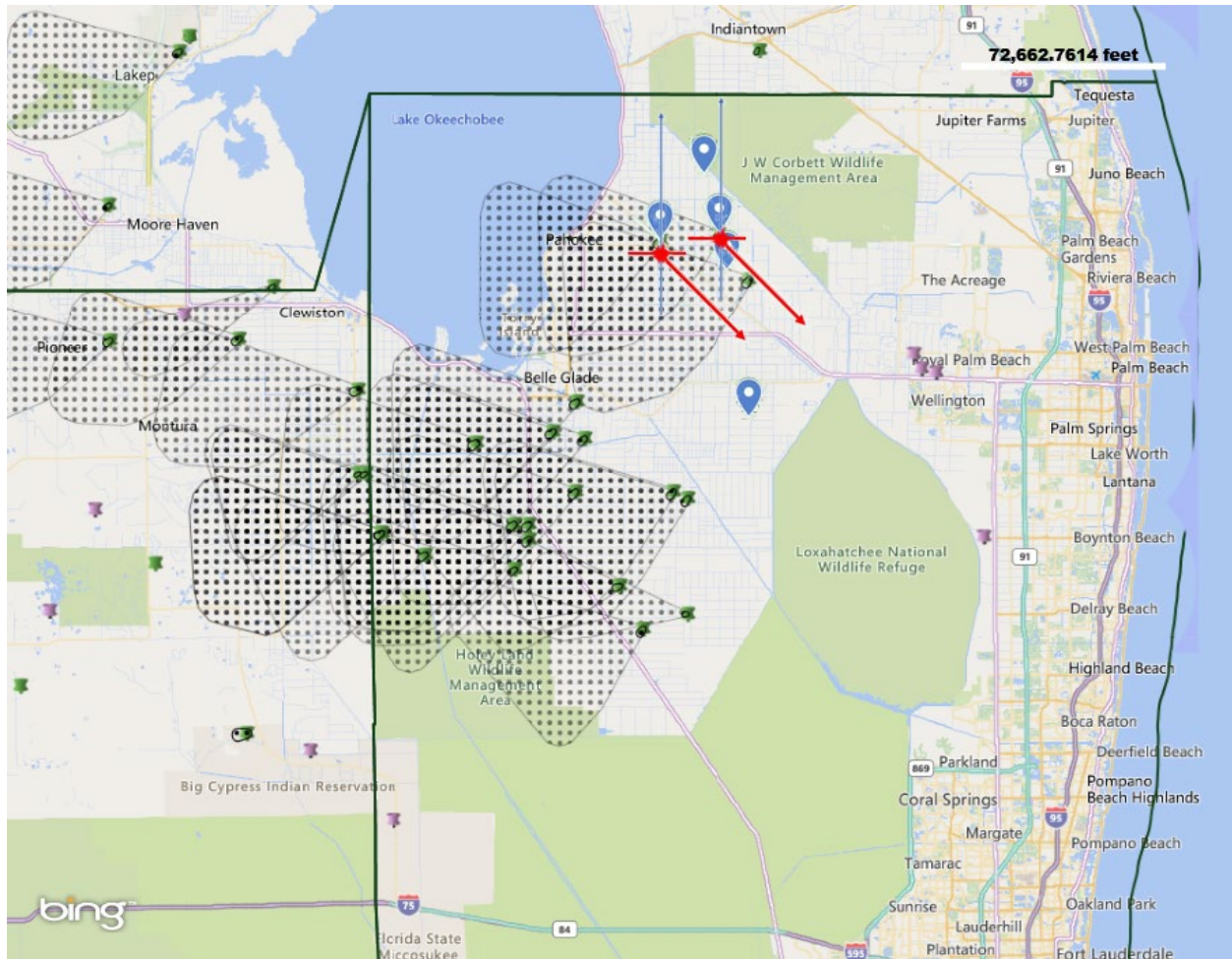


¹¹⁴ Denial locations mapped using Google – “My Maps” (<https://www.google.com/mymaps>); latitude and longitude for denial locations obtained from FFS denial records in Attachment 2. Plume Maps in Attachment 7.

¹¹⁵ See Attachment 6 – FFS Wind Direction Spreadsheets for Palm Beach County and Martin County.

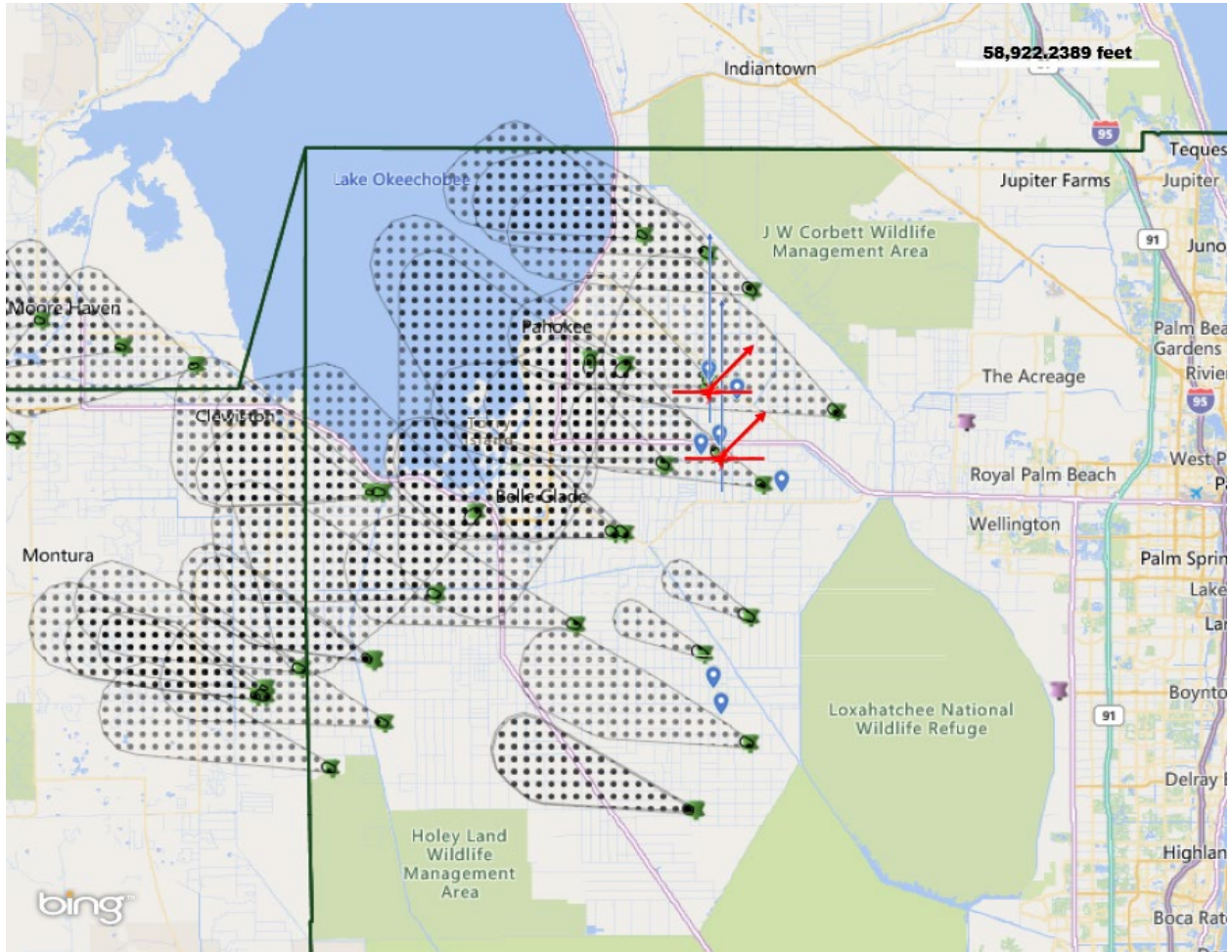
Similarly, as shown below, on February 13, 2023, a day when the transport wind direction was blowing from the northwest at 12 miles per hour in Palm Beach County, FFS denied approvals for proposed burns at locations in Zone 2N and Zone 5 upwind of the eastern cities. Then, on the next day, February 14, 2023, FFS apparently approved burns at the same locations when the plumes from those burns would overlap Pahokee.

February 13th Burn Denials Superimposed on February 14th Approved Burn Plumes Map:



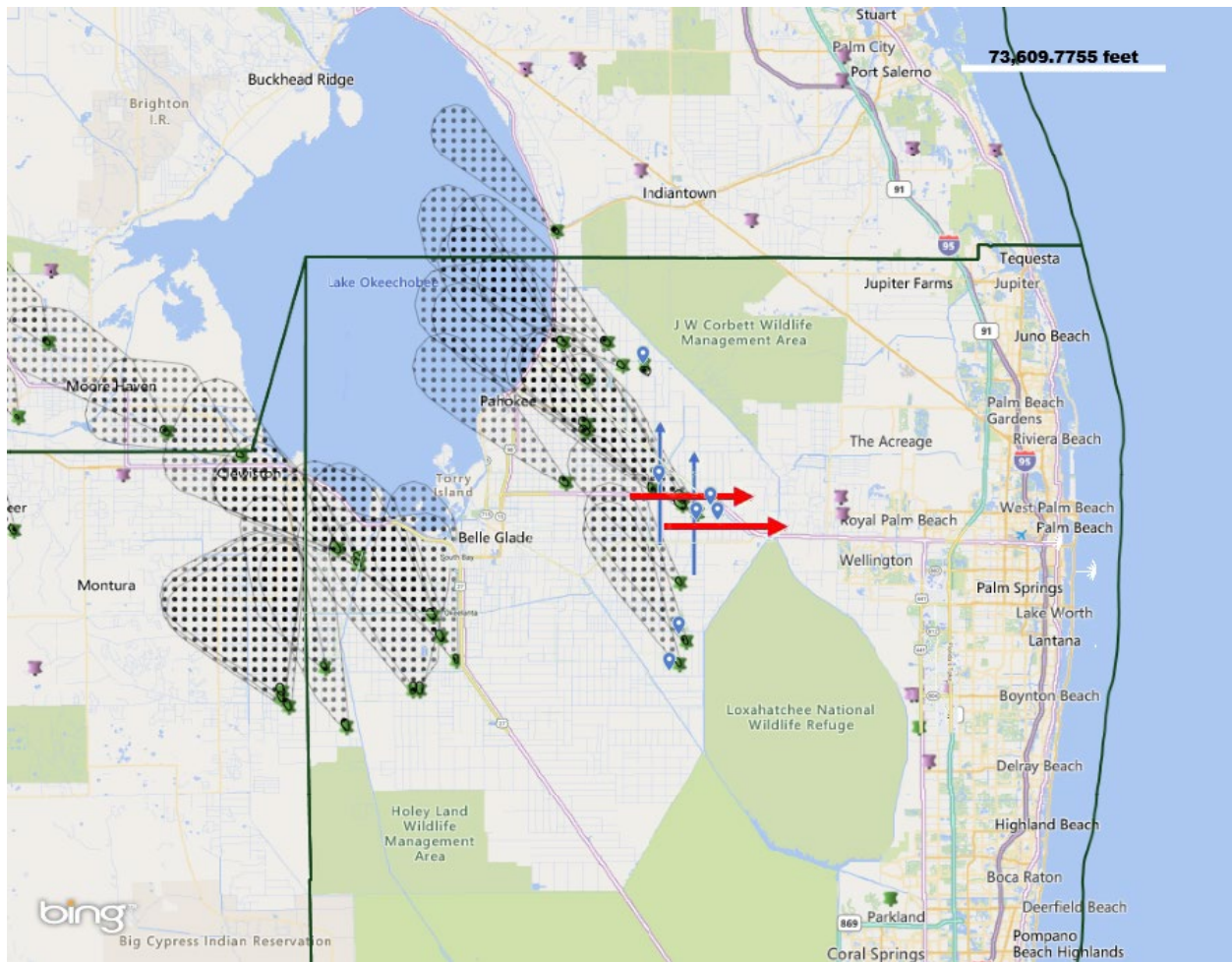
And whereas, on April 1, 2023, FFS denied approval for burns at two locations in Zone 2N when the transport wind was blowing from the southwest at 12 miles per hour, FFS apparently authorized burns at what seem to be the same locations on April 4, 2023, when the wind direction sent the plumes toward Pahokee and Belle Glade instead:

April 1st Burn Denials Superimposed on April 4th Approved Burn Plumes Map:



Similarly, as shown below, on May 3, 2023, apparently FFS denied approval for two burns in Zone 2N, when the wind was blowing from the west at 12 miles per hour, toward the eastern cities, and then authorized burns at what appears to be the same locations on May 5, 2023, when the plumes from those burns overlapped with Pahokee:

May 3rd Burn Denials Superimposed on May 5th Approved Burn Plumes Map:



The examples above demonstrate how FFS practices to protect the eastern cities from ash and smoke impacts—by prohibiting burns in Zone 2N on days when the wind is blowing toward the eastern cities at 10 miles per hour or more—have the effect of shifting those impacts to the predominantly Black Glades communities.

Sierra Club staff also analyzed information from FFS regarding its burn authorizations and denials to compare the denial rate for days when the winds were blowing toward the eastern cities versus the denial rate for days when the wind was blowing in other directions.¹¹⁶ For proposed burns in Palm Beach County received during the most recent burn season (from October 1, 2022 through May 30, 2023), on the subset of days when the transport or surface wind was blowing from the northwest, west, or southwest (toward the east), FFS denied approximately 27.1% of proposed burn applications.¹¹⁷ In contrast, FFS denied approximately 13.2% of proposed burn applications for burns in Palm Beach County for the subset of days during the same season when the wind was blowing in all other directions.¹¹⁸ **Thus, for proposed burns in Palm Beach County, the denial rate for days when the wind was blowing toward the east was roughly double the denial rate for days when the wind was blowing in all other directions.**¹¹⁹ This demonstrates the impact of the practices described in FFS documents, discussed above, memorializing the agency’s internal policies and practices of denying authorizations for burns in the sugar growing region areas to the west of Wellington, Westlake, and Royal Palm Beach when the wind direction and speed would direct smoke or ash plumes toward those eastern cities, while providing no equivalent protection to the communities on the western side of those areas—Pahokee, Belle Glade, and South Bay.¹²⁰ Further, as illustrated by the examples from January, February, April, and May discussed above, an obvious consequence of it being twice as likely that a proposed burn will be denied on a day when the wind is blowing toward the east is that a burn at the same location will be approved on a subsequent day when the wind is blowing away from the eastern cities, including in directions toward the Glades communities of Pahokee, Belle Glade, and South Bay.

The plume maps for authorized burns and burn denial records provided by FFS also illustrate that on days when the wind was blowing toward the east, FFS authorized burns with

¹¹⁶ FFS provides information on the daily number of sugarcane burns authorized in each county at <http://fireinfo.fdacs.gov/fmis.publicreports/BurningAuthorizationsSummary.aspx>. Using that information, the number of denials for the same days, *see* Attachment 2, and the wind direction information FFS provided in response to a records request, *see* Attachment 6, Sierra Club calculated the proportion of applications denied for days when the wind direction had a component blowing from the west (northwest, west, or southwest) compared to the proportion of applications denied for all other days. *See* Attachment 9 – Sierra Club Analysis of Denials by Wind Direction.

¹¹⁷ *See* Attachment 9 – Sierra Club Analysis of Denials by Wind Direction.

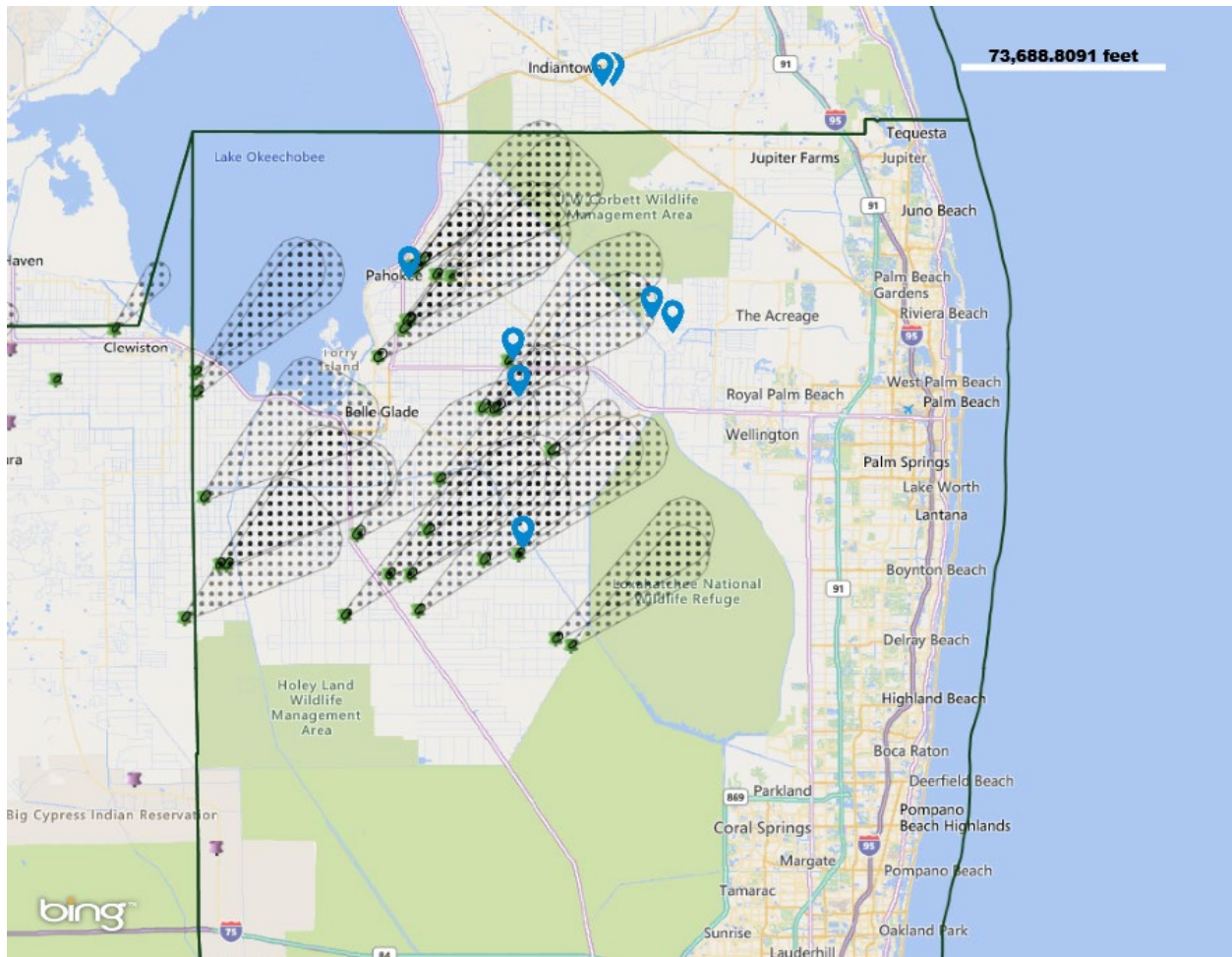
¹¹⁸ *See* Attachment 9 – Sierra Club Analysis of Denials by Wind Direction.

¹¹⁹ The respective proportions of applications denied were 0.2706 for the days with wind from NW, W, or SW and 0.1318 for the other days. *See id.* $0.2706 \div 0.1318 = 2.05$.

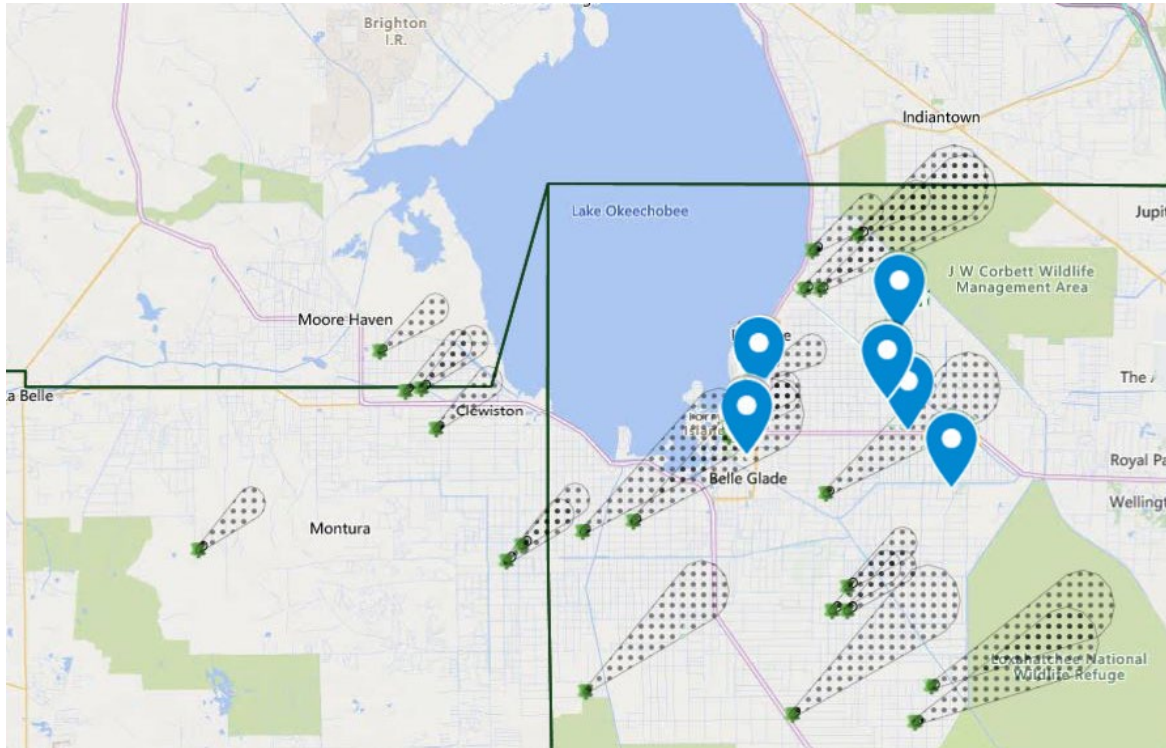
¹²⁰ *See supra* section III.B.

plumes of ash or smoke overlapping Pahokee, Belle Glade, and/or South Bay on the same days that it denied authorizations for burns at locations closer to Wellington, Westlake, or Royal Palm Beach. For example, for February 3, 2023, when the transport winds were blowing from the west at 18 miles per hour according to FFS's wind direction spreadsheet, FFS authorized burns with plumes that overlapped South Bay, while denying approval for burns at locations near Westlake. Similarly, for March 13, 2023, when transport winds were blowing from the west according to FFS's spreadsheet, FFS authorized burns with plumes that overlapped parts of Belle Glade, while denying burns at multiple locations in Zone 2N upwind from Westlake and the other eastern cities. The figures below show the locations of denied burns for those days as blue pins superimposed on the FFS/FDACS-burn viewer generated plume maps for approved burns for the same days.

February 3, 2023 Burn Denials Superimposed on February 3, 2023 Approved Burn Plumes Map:



March 13, 2023 Burn Denials Superimposed on March 13, 2023 Approved Burn Plumes Map:



The approvals and denials for those dates thus illustrate FFS apparently conferring stringent protection on the eastern communities while denying the same protection to the Glades communities.

In sum, consistent with its memorialization of its practices based on wind direction and speed,¹²¹ FFS appears to approve burns with ash and smoke plumes overlapping the predominantly Black Glades communities of Belle Glade, Pahokee, and South Bay while denying approval for burns with plumes that would reach the largely white eastern cities of Westlake, Wellington, and Royal Palm Beach—**not only subjecting the Glades communities to impacts from which the largely white eastern communities are protected, but also shifting additional impacts to the Glades communities as a consequence of protecting the eastern communities.**

In addition to the evidence above, the conclusions of a 2022 study underline the disparate impacts experienced by Glades communities compared to eastern cities. Nowell et al. (2022) found that sugarcane harvest activities increased mean PM_{2.5} by 0.7 µg/m³ during the winter burn season

¹²¹ See Attachment 4 - 2020/2021 Description of FFS Burn Authorization Practices.

based on monitoring data from Belle Glade, whereas PM_{2.5} concentrations measured at Royal Palm Beach increased by 0.2 µg/m³ during the burn season.¹²² The study estimated that sugarcane harvest activities contributed approximately 1.4 µg/m³ to mean PM_{2.5} at Belle Glade during the six-month harvest season, compared to 0.9 µg/m³ for Royal Palm Beach.¹²³ As discussed above, PM_{2.5} is “linked to lung and other cancers, cardiopulmonary disease such as ischemic heart disease, and premature death.”¹²⁴ Based on modeled estimates of PM_{2.5} contributions from sugarcane burns, Nowell et al. (2022) found: “Sugarcane fires . . . are expected to have 10 times greater mortality impact on SGR [Sugar Growing Region] residents, who were predominantly non-White and lower income (57% non-White, \$34,000 median household income), than wealthier residents of coastal Palm Beach County (23% non-White, USD \$71,000 median household income) or South Florida in general (23% non-White, USD \$62,000 median household income) (U.S. Census Bureau 2020b).”¹²⁵ The authors also noted that “[c]hronic exposure to biomass burning, including sugarcane smoke, also has serious nonfatal consequences, including asthma, bronchitis, missed work and school days, and impacts on pregnancy and child development.”¹²⁶

According to data from EPA’s EJScreening tool, asthma prevalence values for South Bay, Belle Glade, and Pahokee, are 10.3, 11.6, and 11.8, respectively, compared to 8.0, 8.2, and 8.4 for Wellington, Royal Palm Beach, and Westlake, an average of 8.7 for Florida, and a U.S. average of 10.¹²⁷

¹²² Nowell, et al. (2022), *supra* note 6, at 087004-6.

¹²³ *Id.*

¹²⁴ *Id.* at 087004-1 (citing supporting studies).

¹²⁵ *Id.* at 087004-10.

¹²⁶ *Id.* at 087004-11 (citing studies). Nowell et al. (2022) also explained: “Sugarcane fires and other biomass burning fires are sources of PM_{2.5}, which is linked to lung and other cancers, cardiopulmonary disease such as ischemic heart disease, and premature death. . . Biomass burning smoke is also linked to serious, nonfatal respiratory and cardiovascular morbidity, including asthma, bronchitis, pneumonia, and chronic obstructive pulmonary disease, as well as low birth weight and increased COVID-19 mortality.” *Id.* at 087004-1 (citing studies).

¹²⁷ See Attachment 5 – EJScreen Community Reports for Belle Glade, Pahokee, South Bay, Wellington, Westlake, and Royal Palm Beach. United States Environmental Protection Agency, 2023 version, EJScreen Community Reports, available at: <https://ejscreen.epa.gov/mapper> (generated Aug. 2, 2023 or Aug. 3, 2023, as shown on each report); see also U.S. EPA, EJScreen Map Descriptions <https://www.epa.gov/ejscreen/ejscreen-map-descriptions> (explaining that asthma values shown in EJScreen are “Asthma prevalence among adults aged 18 or older. This data is available at the tract level; the same tract value is then assigned to all sub block groups.”).

Comparison of Asthma Indicator Value in Glades cities vs. Eastern cities¹²⁸

City	Asthma Health Value (from EJScreen)	National Percentile	State Percentile
Belle Glade	11.6	86	96
Pahokee	11.8	89	97
South Bay	10.3	64	89
Wellington	8	5	24
Westlake	8.4	11	42
Royal Palm Beach	8.2	8	35

A 2021 analysis based on eight years of hospitalization data found that during burn season, hospitalizations and emergency room visits for respiratory illness rose by 35% for patients from Belle Glade, compared to a 19% rise for patients from Indiantown, “a rural, largely white area just north of the Palm Beach County sugar-growing region.”¹²⁹

In addition to health impacts, residents of the Glades suffer other disparate negative effects to their general welfare. Burns fill the air with the smoke, soot, and ash (“black snow”).¹³⁰ To avoid the smoke and ash, residents, including school children, stay inside instead of enjoying the outdoors,¹³¹ impairing their recreational interests and enjoyment of life. During the months of the burning season (October to May), residents are burdened with cleaning soot from their homes, cars, and clothes.¹³² Residents must also bear the extra costs of running air conditioners

¹²⁸ The information in this chart is from EJScreen Community Reports for Belle Glade, Pahokee, South Bay, Wellington, Westlake, and Royal Palm Beach. United States Environmental Protection Agency, 2023 version, EJScreen Community Reports, available at: <https://ejscreen.epa.gov/mapper>, last accessed Aug. 2, 2023 or Aug. 3, 2023, as shown on each report. See Attachment 5 – EJScreen Reports.

¹²⁹ A Complete Failure of the State, *supra* note 35.

¹³⁰ Grist Investigation, *supra* note 27; Black Snow Investigation, *supra* note 14.

¹³¹ See Black Snow Investigation, *supra* note 14 (“The Post and ProPublica spoke with dozens of Glades residents, teachers, custodians, doctors, nurses and field workers about their experiences with cane burning... Many of these accounts paint a picture of a community often left with little choice but to stay indoors to avoid the smoke and ash outside... To cope with the smoke and ‘black snow,’ the flurries of ash that carry into neighborhoods, residents have adopted a series of unwritten rules: If you can’t shut your windows in the heat, press an air conditioner filter against the opening to keep the smoke out; rush children inside at the first whiff of the familiar, acrid stench; brush the flakes off your clothes instead of rubbing them off, otherwise they’ll stain; and, importantly, keep an inhaler or nebulizer nearby ... Teachers say that, during burning season, they cancel outdoor recess and send kids home after asthma attacks.”); see also Grist Investigation, *supra* note 27 (“the architecture firm contracted by the Palm Beach County school board to modernize [a school in South Bay] emphasizes that its new design prevents students from having to walk outside during the day: ‘Sugarcane fields are burned sending hazardous air pollutants into the air. The heavy smoke and ash prohibit outdoor play, keeping the children inside throughout the school day many times during the year.’”).

¹³² See, e.g., <https://youtu.be/cPoC5fQoBJE> (video showing “black snow” on sidewalk in Belle Glade); <https://youtu.be/HnN4WXtG1JI> (video showing “black snow” on sidewalk and parking lot in Belle Glade); Grist Investigation, *supra* note 27 (comment of “out-of-town ally” [redacted] regarding frustration with cleaning ash

even during the coolest months of the year because they have to close their windows to keep out the soot.¹³³ As smoke rarely reaches eastern communities due to FFS burn authorization practices,¹³⁴ these impacts are disproportionately concentrated in the Glades.



Smoke plumes behind residences in Belle Glade.¹³⁵

from boat docked in more western part of SGR, and stating: “I’m personally fed up...I just don’t understand how [Glades residents] can put up with this, being targeted on a daily basis.”); Black Snow Investigation *supra* note 14 (describing residents having to brush flakes of “black snow” off their clothes to avoid staining them).

¹³³ Antigone Barton and Hannah Morse, *Glades residents left behind: Nikki Fried’s ‘changes’ to cane burning served only Big Sugar*, Palm Beach Post (Aug. 11, 2022), <https://www.palmbeachpost.com/in-depth/news/local/2022/08/11/cane-burning-nikki-frieds-historic-changes-served-only-big-sugar/10030576002/> (“As Glades residents clean ash and soot from their porches, cars and roofs, the consequences of living in the midst of burning agricultural waste more than half of every year further impoverish their communities, [Colin] Walkes [a former Pahokee mayor] says. The burning reduces property values, forces residents living on low income to run air conditioning during the coolest months of the year because they have to close their windows and burdens them with medical expenses, he says.”).

¹³⁴ Black Snow Investigation, *supra* note 14.

¹³⁵ Image from Mary Ellen Klas, *Florida Lawmakers Pass Bill to Shield Sugar Farmers from Lawsuits*, Tampa Bay Times (Apr. 22, 2021), available at: <https://www.tampabay.com/news/florida-politics/2021/04/22/legislators-pass-bill-to-shield-sugar-farmers-from-lawsuits/>; see also Stop the Burn, Videos, available at: <https://stopsugarburning.org/the-burning-problem/#gallery>.



Example of “black snow” coating a car windshield in 2018.¹³⁶



Ash from sugarcane burns on February 24, 2023.

¹³⁶ Stop the Burn, Gallery, <https://stopsugarburning.org/the-burning-problem/#gallery>.

B. Florida Forestry Officials Acted Quickly to Protect Predominantly White Communities from Smoke and Ash Impacts But Have Not Responded Accordingly to Complaints from Communities of Color

It is clear that FFS is aware of the negative impacts of smoke and ash plumes from sugarcane burning on the welfare of Palm Beach County residents because Department of Agriculture officials took prompt action to alleviate those impacts as soon as predominantly white communities complained of experiencing them in 1991,¹³⁷ and FFS has continued to provide stringent protections to those communities based on wind direction constraints. As detailed above, in 1991, due to the expansion of eastern cities toward the SGR, predominantly white communities of Wellington and Royal Palm Beach experienced—and complained to officials of—the same kinds of adverse impacts plaguing predominantly Black communities in the Glades.¹³⁸ In response, new policies were developed that same year to restrict sugarcane burns when the wind would blow plumes toward those eastern communities. And the agency clearly recognized the negative effects of sugarcane burning at that time, as a Florida Department of Agriculture official stated that the burn restrictions were based on the need “to eliminate the potential problems for people having to breathe the ash and deal with stuff falling on their [property].”¹³⁹

Despite this acknowledgement that smoke and ash from the burns has negative impacts on the welfare of communities that warranted prohibiting burns to prevent them, the FFS has seemingly ignored these same exact problems when they are severely impacting communities in the Glades. It has no justification for doing so.

A sugar farmer and state representative publicly suggested that the disparity in protections is based on differences in population as there currently are “1.4 million people living in Palm Beach County but only probably 30 or 40 thousand of them in Belle Glade.”¹⁴⁰ But the relative population sizes of the eastern and Glades communities cannot provide a rational basis for the distinctions in protection. When Florida officials implemented the wind-direction-based burn restrictions to protect the predominantly white eastern communities in 1991 in response to complaints from residents in Wellington and Royal Palm Beach, approximately 35,000 people

¹³⁷ Black Snow Investigation, *supra* note 14.

¹³⁸ *Id.*

¹³⁹ *Id.*

¹⁴⁰ Grist Investigation, *supra* note 27.

lived in those cities.¹⁴¹ The total population of Belle Glade, Pahokee, and South Bay at that time was similar, at approximately 28,000.¹⁴² And, today, a comparable number of people live in those Glades communities—around 28,672.¹⁴³ Yet the FFS has failed to take any substantive measures to provide them with tantamount protections from the same negative impacts, either in 1991 or in the decades since. In 1991, concern about the welfare of “only” 35,000 residents in predominantly white communities was sufficient to motivate officials to take action to protect those communities from smoke and ash from cane burns. Since then, and now, in 2023, the welfare of a comparable population in predominantly Black communities continues to suffer from the same impacts, yet FFS declines to exercise its power to protect them.

C. FFS Has Failed to Act to Address the Disproportionate Impacts on Predominantly Black Communities

FFS has not acted to prevent disproportionate harm to predominantly Black communities in the Glades, even though the negative impacts of its ongoing practices on those communities were apparent in 1991 and continue to be apparent today.

As detailed above, in the years after Florida Forestry officials instituted wind-direction based protections for the eastern communities, Glades community members raised concerns and complained about similar impacts, to no avail.¹⁴⁴ And grassroots activists in the Glades have been advocating for changes to the FFS’s sugarcane burn program, including by lobbying and meeting with FFS leadership.¹⁴⁵

To date, FFS has failed to respond to provide a meaningful response to these efforts. In 2019, Department of Agriculture Commissioner Nikki Fried announced changes to the sugarcane burn program, based on a “promise that [she] made to the people of the state of Florida that [her

¹⁴¹ Black Snow Investigation, *supra* note 14 (“About 35,000 people lived in Wellington and Royal Palm Beach in the early 1990s, when the complaints first flowed. Today, about 31,000 people live in the Glades.”).

¹⁴² U.S. Department of Commerce, 1990 Census of Population General Population Characteristics Florida, Section 1, (1990- CP-1-11), Table 6 page 33, 73, 84 *available at*

<https://www2.census.gov/library/publications/decennial/1990/cp-1/cp-1-11-1.pdf> (showing population of Belle Glade city of 16,177; Belle Glade camp of 1,616; South Bay of 3,558; and Pahokee 6,822—totaling 28,173).

¹⁴³ Black Snow Investigation, *supra* note 14 (“About 35,000 people lived in Wellington and Royal Palm Beach in the early 1990s, when the complaints first flowed. Today, about 31,000 people live in the Glades.”); *see also* Attachment 5 (EJScreen Reports showing current populations for Belle Glade, South Bay, and Pahokee of 17,455; 5,733; and 5,484, respectively, which totals to 28,672 for the three communities.)

¹⁴⁴ *See supra* section III. B.

¹⁴⁵ *See id.* *See also* Stop the Burn, “Our Campaign: Speaking Truth to Power,” <https://stopsugarburning.org/stop-the-burn/#speakingtruth>.

administration was] going to be bold . . . [and was] going to look at changes.”¹⁴⁶ However, this stated commitment to change proved to be an empty promise, as the changes to the program did not ban sugarcane burning when the wind blows toward the Glades, nor did they implement any protections for the Glades communities that would have been comparable to those guaranteed to the eastern communities in 1991.¹⁴⁷ When provided with the same opportunity and reason to protect communities of color in 2019 and 2020 as it had to protect affluent white communities in 1991, the FFS chose to ignore the welfare of the Glades communities and to continue disproportionately burdening them with the negative impacts of sugarcane burning. And it continues to do so now.

D. There Is No Justification for the Florida Forest Service’s Failure to Address the Disproportionate Impacts on Predominantly Black Communities

The FFS has no legitimate justification for its decisions to protect largely white eastern communities from the negative impacts of sugar cane burning while exposing predominantly Black communities in the nearby portion of the SGR to those harms, and even shifting additional impacts to the latter, as detailed above. While the FFS may attempt to justify its sugarcane burn authorization decisions based on population differences between eastern and western Palm Beach County, this justification fails for several reasons.

As discussed above, the combined population of Pahokee, Belle Glade, and South Bay is roughly 28,600 people—substantially similar to the population of the eastern communities of Wellington and Royal Palm Beach in 1991, which the FFS took swift and serious action to protect from sugarcane burn consequences at that time. The FFS cannot claim that its initial justification for issuing restrictions on sugarcane burning to avoid risk to 35,000 people in predominantly white communities was legitimate while also attempting to justify its decision *not* to protect 28,600 people in predominantly Black communities from the same impacts.

Moreover, population is far from the only salient consideration here. Focusing solely on the population difference in evaluating impacts on general welfare ignores a number of key risk factors that affect the Glades communities. Glades communities have existing socioeconomic

¹⁴⁶ “Florida Agriculture Commissioner Nikki Fried Adds Restrictions to Sugar Industry Burning.” CBS News (Oct. 2019), available at: <https://www.cbsnews.com/miami/news/florida-agriculture-commissioner-nikki-fried-adds-restrictions-to-sugar-industry-burning/>.

¹⁴⁷ *Id.*; see Antigone Barton and Hannah Morse, *Glades residents left behind: Nikki Fried’s ‘changes’ to cane burning served only Big Sugar*, Palm Beach Post (Aug. 11, 2022), <https://www.palmbeachpost.com/in-depth/news/local/2022/08/11/cane-burning-nikki-frieds-historic-changes-served-only-big-sugar/10030576002/>.

factors and health burdens that increase vulnerability to environmental hazards like air pollution from sugarcane burning. According to EPA’s EJScreen tool, the Glades cities are likely more vulnerable to respiratory hazards than the eastern cities, taking into account both emissions exposures and demographics. The EJ Index for Air Toxics Respiratory Hazard combines demographic factors—low-income population and people of color populations—with an analysis of toxic pollutants in ambient outdoor air, to indicate community-level vulnerability to respiratory hazards.¹⁴⁸ It is based on data from the National Emissions Inventory (NEI), which accounts for emissions from sugarcane field burns in Palm Beach County, Hendry County, and Glades County.¹⁴⁹

Comparison of Air Toxics Respiratory Hazard Index in Glades cities vs. Eastern cities¹⁵⁰

City	National Percentile	State Percentile
Belle Glade	78	71
Pahokee	77	70
South Bay	66	73
Wellington	53	39
Westlake	61	50
Royal Palm Beach	59	47

The state and national percentiles for this indicator for Glades communities are substantially higher than for the eastern cities.

And, as detailed above, EPA’s EJScreen reports show that Belle Glade, Pahokee, and South Bay have asthma prevalence values worse than Wellington, Westlake, and Royal Palm Beach, and worse than Florida and U.S. averages.

Finally, there are alternatives that would reduce or potentially eliminate the discriminatory effects. The FFS could alleviate the discriminatory effects at issue by phasing out

¹⁴⁸ U.S. Environmental Protection Agency (EPA), 2023. EJScreen Technical Documentation, at 18, available at: <https://www.epa.gov/system/files/documents/2023-06/ejscreen-tech-doc-version-2-2.pdf>. U.S. Environmental Protection Agency (EPA), EJ and Supplemental Indexes in EJScreen, available at: <https://www.epa.gov/ejscreen/ej-and-supplemental-indexes-ejscreen>, last accessed Aug. 21, 2023.

¹⁴⁹ U.S. Environmental Protection Agency (EPA), National Emissions Inventory (NEI), 2020 NEI Data Retrieval Tool, available at: <https://awseedap.epa.gov/public/single/?appid=20230c40-026d-494e-903f-3f112761a208&sheet=5d3fdda7-14bc-4284-a9bb-cfd856b9348d&opt=ctxmenu.currsel>, last accessed 8/2/2023.

¹⁵⁰ The information in this chart is from EJScreen Community Reports for Belle Glade, Pahokee, South Bay, Wellington, Westlake, and Royal Palm Beach. United States Environmental Protection Agency, 2023 version, EJScreen Community Reports, available at: <https://ejscreen.epa.gov/mapper> (last accessed Aug. 2, 2023 or Aug. 3, 2023, as shown on each report). See Attachment 5 – EJScreen Reports.

and ultimately ending all authorizations for sugarcane burns, such that “green harvesting” would ultimately replace pre-harvest burning. This would result in cleaner air and lower health risks for all of South Florida, and it would have an especially positive impact on the Glades communities. As discussed above, three of the top five sugar-producing countries have shifted toward green harvesting of sugarcane, and either have stopped burning or are in the process of phasing it out.¹⁵¹

FFS could also establish buffer zones around Belle Glade, Pahokee, and South Bay, among other communities in the SGR, and deny applications for burn authorizations where the plume modeling generated with the application shows that the plumes will overlap with those zones given the anticipated wind conditions for the day of the burn.

Another option would be for FFS to designate no-burn buffer zones within a specified distance from those communities.¹⁵² Advocates have pressed for the adoption of such buffer zones.¹⁵³

In light of the available alternatives, the disproportionate effects imposed on the Glades communities are particularly egregious and wholly unnecessary.

V. EPA and USDA Have Jurisdiction

The EPA and USDA have jurisdiction over this complaint because it arises from activities and practices of the FFS, which receives federal funding from both agencies as a subdivision of FDACS. Jurisdiction under Title VI attaches once an entity receives federal financial assistance.¹⁵⁴ The FFS is a “program or activity” that receives federal funding from the EPA and USDA; therefore, its actions must comply with Title VI to continue to receive federal funding and the EPA and USDA, with the DOJ’s oversight, must ensure its compliance. This complaint is timely because actions by FFS under its burn authorization program, that provided protection to largely white communities from the impacts of cane burns while allowing

¹⁵¹ Black Snow Investigation, *supra* note 14. *See also supra* section III.C.

¹⁵² *See e.g.*, Hannah Morse, *Palm Beach County Democrats urge Nikki Fried to expand sugar cane burning buffers*, Palm Beach Post (Apr. 13, 2022) available at <https://www.palmbeachpost.com/story/news/local/2022/04/13/palm-beach-county-democrats-support-wider-sugar-cane-burning-buffers-glades/7287296001/> (describing resolution asking then-Commissioner Nikki Fried to require a “minimum 27-mile radius burn-free buffer zone around communities impacted by pre-harvest sugar field burning as a first step toward the eventual end of pre-harvest sugar field burning.”).

¹⁵³ *Id.*

¹⁵⁴ DOJ Title VI Legal Manual, at Section V.

predominantly Black communities to suffer those impacts, have occurred within the last 180 days.

A. The FFS, and its Administration of the Agricultural Burn Authorizations, Is a “Program or Activity” Subject to Title VI

A “program or activity” includes “all of the operations of . . . a department, agency, special purpose district, or other instrumentality of a State or of a local government . . . any part of which is extended Federal financial assistance.”¹⁵⁵ The FFS is a division of FDACS, which is a state agency. Thus, the FFS’s operations, including all of its actions involving the burn authorization decisions at issue here, are considered “program[s] or activit[ies]” under Title VI.¹⁵⁶

B. FDACS, of Which FFS Is a Division, Receives Federal Funding from the EPA and USDA

According to the DOJ Title VI Legal Manual, “[t]he clearest example of Title VI-covered federal financial assistance is money provided through federal grants, cooperative agreements, and loans.”¹⁵⁷ Funding can be granted directly by an agency or indirectly through another entity, and “[i]n either case, the direct recipient as well as the secondary or subrecipient are considered to have received federal funds.”¹⁵⁸ The federal financial assistance does not have to relate to the specific program being challenged— so long as any part of the entity receives federal funding, Title VI applies.¹⁵⁹

EPA and USDA have provided grant funds to FDACS, the broader department within which the FFS operates, including grants for “forest stewardship,” “forest health protection,” and “cooperative forestry assistance.”¹⁶⁰ The following examples of federal funding from EPA and USDA fall within the scope of Title VI:

¹⁵⁵ 42 U.S.C. § 2000d-4a.

¹⁵⁶ *See id.*

¹⁵⁷ DOJ Title VI Legal Manual, at Section V.C.1.a.

¹⁵⁸ *Id.*

¹⁵⁹ *Id.* at Section V.A.3. *See Howe v. Hull*, 874 F. Supp. 779, 789 (N.D. Ohio 1994) (“Defendant cannot receive federal funds on the one hand, and on the other deny he is covered by the [federal Rehabilitation Act] simply because he received no federal funds for his involvement with [complainant].”).

¹⁶⁰ *See* Attachment 10 – Lists of Grants from EPA and USDA to FDACS.

EPA granted FDACS \$109,314 from October 1, 2019 through September 30, 2023.¹⁶¹ On June 21, 2023, EPA granted \$1,174,330 to FDACS for performance through September 30, 2025.¹⁶²

USDA granted FDACS \$862,773 from January 13, 2021 to September 30, 2023 through the Forest Stewardship Program, “to promote and enable the long-term active management of non-industrial private and other non-federal forest land to sustain the multiple values and uses that depend on such lands.”¹⁶³ On July 29, 2023, USDA outlayed \$17,892 to FDACS for the “Florida Forestry Legacy Administration Program,”¹⁶⁴ for which FFS is the “State Lead Agency.”¹⁶⁵

Thus, FDACS and all of its divisions, including the FFS, are subject to Title VI’s prohibition on discrimination. The EPA and USDA, as grantor agencies, are responsible for ensuring that FDACS and FFS comply with Title VI.

C. FFS Has Taken Actions with Discriminatory Effects in the Last 180 Days

Pursuant to EPA and USDA Title VI regulations, administrative complaints are considered timely if they are filed within 180 calendar days of the date of the last alleged act of discrimination.¹⁶⁶ A complaint alleging a continuing discriminatory policy or practice must “allege facts that are sufficient to indicate either a series of related acts of which one occurred

¹⁶¹ USASpending.gov, Award Profile: Grant Summary, available at: https://www.usaspending.gov/award/ASST_NON_98408720_6800. The database states that the purpose of this award is “to address its highest environmental priorities, improve environmental performance, achieve administrative savings and strengthen the partnership between the Florida Department of Agriculture and Consumer Services and EPA. This agreement funds statewide programs to: provide a comprehensive program of registration, labeling, training, certification, inspections and enforcement to prevent unnecessary exposure to humans and the land and water by ensuring that pesticides are used and disposed of in the manner specified on each product. inspections and enforcement will deter non-compliance with product requirements.” *Id.*

¹⁶² USASpending.gov, Award Profile: Grant Summary, available at: https://www.usaspending.gov/award/ASST_NON_98408723_6800 (Assistance transaction unique key: 6800_98408723_-NONE-_66.605_0; award id: 98408723). The database states that “[t]he purpose of this agreement is to provide funding for the operation of the continuing pesticide environmental programs while giving it greater flexibility to address its highest environmental priorities, improve environmental performance, achieve administrative savings and strengthen the partnership between the FDACS and the Environmental Protection Agency.” *Id.*

¹⁶³ USASpending.gov, Award Profile: Grant Summary, available at: https://www.usaspending.gov/award/ASST_NON_21DG11083112010_12C2/.

¹⁶⁴ USASpending.gov, Award Profile: Grant Summary, available at: https://www.usaspending.gov/award/ASST_NON_21DG11083112004_12C2/ (Assistance transaction unique key: ASST_NON_21DG11083112004_12C2; award id: 21DG11083112004).

¹⁶⁵ See <https://www.fdacs.gov/Forest-Wildfire/Our-Forests/Land-Planning-and-Administration/Florida-Forest-Legacy-Program> (last accessed Aug. 24, 2023).

¹⁶⁶ 40 C.F.R. § 7.120(b)(2); 7 C.F.R. § 15.6.

within the 180-day filing period or a systematic policy or practice that operated within the 180-day period.”¹⁶⁷

As explained in sections III and IV. A. above, FFS internal practices and policies afford stringent protections from smoke and ash to largely white eastern communities while failing to provide tantamount protection to predominantly Black communities of color in the SGR. As detailed in section IV.A. above, specific examples of FFS authorizing burns with smoke and ash plumes reaching predominantly Black Glades communities shortly after denying burns at approximately the same locations when the wind was blowing toward the eastern communities apparently occurred on the following days within the last 180-days:

- **April 4, 2023**
- **May 5, 2023**

And an example of FFS authorizing burns with smoke and ash plumes reaching predominantly Black Glades communities on the same day as denying burns closer to the eastern communities, when the wind was blowing in their direction, occurred on:

- **March 13, 2023**

The FFS actions on the above dates within the last 180 days plainly constitute acts with discriminatory effects, made in accordance with practices/policies that have discriminatory effects.

More broadly, each time the FFS authorizes a cane field burn when the wind blows the plumes of smoke or ash toward the Glades communities, while authorizations for burns with plumes that would reach eastern communities are denied based on wind direction and speed, in accordance with its internal practices and policies, it furthers a systematic practice with discriminatory effects. As detailed in Attachment 7, on **35 different days between March 1, 2023 and May 30, 2023**, Sierra Club captured examples of FFS/FDACS-generated plume maps for FFS-approved burns showing plumes of smoke and/or ash overlapping with one or more of the three Glades communities.¹⁶⁸ These examples of burn approvals constituted actions with discriminatory effects, issued in accordance with FFS policies and practices having discriminatory effects, and these actions were within the last 180 days.

¹⁶⁷ EPA, Case Resolution Manual, at 8 (Jan. 2021), available at https://www.epa.gov/sites/default/files/2021-01/documents/2021.1.5_final_case_resolution_manual.pdf.

¹⁶⁸ Attachment 7 – Sierra Club Analysis of Plume Maps for FFS Approved Burns.

D. Other Jurisdictional and Prudential Concerns

This complaint satisfies the jurisdictional and prudential considerations laid out in the applicable laws and regulations and EPA’s Case Resolution Manual. This complaint is in writing and describes in sufficient detail the alleged discriminatory acts, policies, and practices in violation of civil rights laws and regulations.¹⁶⁹ It is filed with EPA and USDA by Sierra Club and its Stop the Burn-Go Green Campaign, whose mission is to work toward environmental justice and put an end to discriminatory sugarcane burning.¹⁷⁰ To our knowledge, this complaint contains unique allegations that have not been alleged in a pending or resolved complaint before EPA or USDA, another federal, state, or local agency, or a state or federal court.¹⁷¹

VI. Conclusion & Remedy Requested

For the reasons set forth above, Sierra Club asks EPA and USDA to thoroughly investigate whether the FFS is in compliance with the requirements under Title VI of the Civil Rights Act with regard to its actions approving and denying sugarcane burns in Palm Beach County. As a complainant, Sierra Club asks to be involved and play an active role in any resolution process. Sierra Club further requests that EPA issue preliminary findings and any recommendations for voluntary compliance, or otherwise resolve the complaint, within 180 days of the date of acceptance, pursuant to the consent decree issued by the U.S. District Court for the Northern District of California in *Californians for Renewable Energy v. US EPA*.¹⁷² Moreover, Sierra Club requests that EPA and USDA work with the FFS to develop a detailed Title VI compliance and implementation plan to end pre-harvest sugar field burning in Florida that includes buffers to protect the Glades communities and a schedule to phase out authorizations of pre-harvest sugar field burning.

¹⁶⁹ EPA Case Resolution Manual, *supra* note 167, at 6, 11.

¹⁷⁰ See 40 C.F.R. § 7.120(a); ECRCO Manual, *supra* note 167, at 10 (“If a complaint alleges the maintenance of a discriminatory policy by a recipient, the complainant need not identify individuals who were discriminated against within the filing period[.]”).

¹⁷¹ See EPA Case Resolution Manual, *supra* note 167, at 13.

¹⁷² No. 4:15-CV-03292-SBA, 2018 WL 11434811, at *1 (N.D. Cal. June 13, 2018), *amended in part*, No. C 15-3292 SBA, 2020 WL 13490288 (N.D. Cal. Sept. 30, 2020).

Additional Concerns

EPA has failed to implement the Clean Air Act to meaningfully address the impacts of sugarcane burning on air quality and public health in the Glades. In 2015, Earthjustice, on behalf of Sierra Club, petitioned EPA to object to the renewal of Title V permits for sugar processing facilities.¹⁷³ Sierra Club asserted that the Title V permits at issue violated the Clean Air Act and its implementing regulations by failing to address emissions from the sugarcane field burning, despite the emission of hazardous air pollutants.¹⁷⁴ EPA did not object to the permits, and never even provided a response to Sierra Club; Sierra Club's petitions are still listed as "pending" in EPA's Title V Petition Database.¹⁷⁵

Moreover, EPA's monitoring of air quality in the Glades region has long been inadequate. The methods of monitoring air quality for Clean Air Act compliance do not accurately reflect impacts from sugarcane burning because they do not take frequent enough measurements to capture short-term spikes in pollution.¹⁷⁶ Federal regulators rely on 24-hour and annual averages to track the types of particulate matter emitted by cane burning; however, cane burning results in short-term spikes in particulate matter that last less than an hour.¹⁷⁷ Thus, EPA monitoring does not account for short-term pollution spikes from sugarcane burning, which can reach four times the average pollution levels in the area.¹⁷⁸ Air quality and public health experts who reviewed an analysis of the particulate matter air impacts from sugarcane burning in the SGR recommended that "policymakers should bolster air monitoring in the Glades, begin considering shorter-term spikes in pollution that are not currently built into federal air standards,

¹⁷³ See Petition Requesting the Administrator to Object to the Title V Operating Permit Renewal for the Okeelanta Sugar Mill and Refinery/Okeelanta Cogeneration Plant (July 27, 2015), available at https://www.epa.gov/sites/default/files/2015-08/documents/okeelanta_petition2015.pdf; Petition Requesting the Administrator to Object to the Title V Operating Permit Renewal for the United States Sugar Corporation's Clewiston Facility (Nov. 19, 2015), available at https://www.epa.gov/sites/production/files/2016-04/documents/us_sugar_petition2015.pdf.

¹⁷⁴ See *id.*; see also 40 C.F.R. § 70.5(c)(3)(i) (requiring that applications for Title V permits include "[a]ll emissions of pollutants for which the source is major, and all emissions of regulated air pollutants").

¹⁷⁵ EPA has a duty to object to a Title V permit if a petitioner can demonstrate that "the permit is not in compliance with the requirements of" the Clean Air Act or its implementing regulations. 42 U.S.C. § 7661d(b)(2); U.S. Environmental Protection Agency, Title VI Petition Database, available at: <https://www.epa.gov/title-v-operating-permits/title-v-petition-database>.

¹⁷⁶ Black Snow Investigation, *supra* note 14.

¹⁷⁷ *Id.*

¹⁷⁸ *Id.*

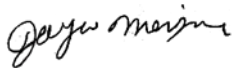
and study community exposure to these pollutants.”¹⁷⁹ EPA has not pursued any of these measures thus far.

In addition to the flawed methods of evaluating particulate matter air impacts, the equipment collecting the air quality data has also historically been unreliable and insufficient. In 2013, the Florida Department of Environmental Protection alerted EPA to the fact that the single air quality monitor in the SGR was malfunctioning and did not meet EPA’s standards for determining Clean Air Act compliance.¹⁸⁰ Despite this, the monitor was not replaced until 2021, and EPA did not take any action to ensure that air quality in the region was being monitored notwithstanding the malfunctioning technology.¹⁸¹

In addition to investigating the FFS burn authorization practices as requested above, Sierra Club urges EPA to consider how it can utilize its authorities under the Clean Air Act to better monitor, evaluate, and reduce or eliminate the effects of sugarcane burning on the Glades communities.

If you have questions regarding this submission, please contact Sierra Club attorneys Joya Manjur and Karimah Schoenhut.

Sincerely,



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¹⁷⁹ *Id.*

¹⁸⁰ *Id.*

¹⁸¹ *Id.*

ATTACHMENTS

- Attachment 1 – Key Studies
- Attachment 2 – FFS Spreadsheets Showing Burn Authorization Denials from October 2022 through May 2023
- Attachment 3 – 2019 Description of FFS Burn Authorization Practices (*Coffie v. Florida Crystals Corporation*, 9:19-cv-80730-RS, ECF Docket No. 81-2, “Exhibit B” (filed Oct. 18, 2019)(obtained from pacer.gov)).
- Attachment 4 – 2020/2021 Description of FFS Burn Authorization Practices
- Attachment 5 – EJScreen Reports
- Attachment 6 – FFS Wind Direction Spreadsheets for Palm Beach County and Martin County
- Attachment 7 – Sierra Club Analysis of Plume Maps for FFS Approved Burns
- Attachment 8 – Sierra Club Analysis of FFS Wind Direction Records
- Attachment 9 – Sierra Club Analysis of Denials by Wind Direction
- Attachment 10 – Lists of Grants from EPA and USDA to FDACS