Black Placemaking under Environmental Stressors
Dryland Farming in the Arid Black Pacific, 1890–1930

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**Abstract:** Dry farming, or techniques of cultivating crops in regions with domineering dry seasons, was central to Black agricultural life across the Black diaspora, but especially in the Black Pacific. Ecologically, the Black diaspora transformed semi-arid ecosystems in both the Atlantic and Pacific. However, there is a dearth of Black narratives that draw on the ecological and botanical relationships held with the land. Through a collaborative botanical and historical approach that blends historical ecology and botany, we evaluate how Black placemaking occurred despite arid climatic stressors and as a result of ecological and cultural knowledge systems. Highlighting Black agricultural life in Costa Chica, Mexico and Blackdom, New Mexico, we argue that people and plants made *cimarronaje* (or collective and situated Black placemaking) possible in the Western coasts and deserts of Mexico and New Mexico through botanical knowledge systems of retaining water and cultivating a life in water-scarce environments.

**Keywords:** Black ecologies, Black placemaking, Blackdom, Costa Chica, drought tolerance, oilseeds, resistance-farming

The intimate relationships Black people have maintained with native, wild-type, and domesticated plants is long standing and has profound impacts on society. African peoples were crucial during early plant domestication circa 10,000 years ago and contributed nine cereal grains, six root crops, foraging crops, vegetables, coffee, and five oil-producing plants (Carney 2013). More specifically, the ingenuity of West African Indigenous peoples led to the selection of dryland cultivars of *Oryza glaberrima* Steud. (African rice) and successful dryland farming techniques over 3,500 years ago (Agnoun et al. 2012; Carney 2013; Richards 1996). It was the cultural and ecological knowledge of seed transfer and cultivation held by Indigenous West African peoples that was intentionally exploited to produce the rice in the US South and southern Mexico under slavery (Carney 2002). Despite the distinct ecological knowledge held by Black communities, recognition of their contributions and innovations is lacking in the botanical sciences. However, emerging frameworks in the humanities not only recognize the botanical legacy of the African diaspora but also identify how these knowledge systems were leveraged as forms of resistance and Black placemaking (Leal 2018; Penniman 2018; Schiebinger 2007; Sweet 2011).

Black people historically and currently employ innovative methodologies of Black placemaking, that is, the creation of sites of endurance, belonging, and resistance through social interaction (Hunter et al. 2016). Farming, in particular, has been a significant method of resistance. During the US Civil Rights Era, resistance farming was harnessed by Fannie Lou Hamer when...
she founded the Freedom Farm Cooperative to provide subsistence and economic development, allowing residents to persist in Mississippi. Similarly aligned organizations existed during this time, such as the North Bolivar County Farm Cooperative and the Federation of Southern Cooperative (White 2018). The presence of community land trusts in the twenty-first century illustrates this is an ongoing tool of Black placemaking. However, Black placemaking can prove quite difficult under arid conditions, where access to water is the crux of cultivating subsistence. To expand on our understanding of Black placemaking under harsh environmental conditions and farming as a form of resistance, we leverage two case studies in arid regions of the Black Pacific: Costa Chica, Guerrero in Mexico and Blackdom, New Mexico in the United States. Both communities practiced dryland farming to mitigate the seemingly inhospitable dry climate by efficiently utilizing rainfall and soil moisture for drought-adapted crops. This technique was necessary for the plants and people to collectively survive these harsh environments. Furthermore, Black placemaking through dryland farming in Mexico and the US Southwest highlights the resourceful ingenuity and resilience of Black farmers. An understanding how Black communities practiced dry farming might point to agricultural inspirations for life in these drying and warming regions under anthropogenic climate change.

In this article, examining the agricultural practices of Black communities in New Mexico and southern Mexico provides an angle into understanding the impact of historically silenced communities. This recognition is especially important given the few narratives about Black people in Mexico and New Mexico, much less stories about relations between Black people and the land (Glasrud 2013). The deficit of Black narratives contributes to the erasure of Black contributions to society and has often been rationalized based on the small percentage of Black people in these regions (Glasrud 2013). The inattention to and erasure of Black environmental knowledge is a political act that knows no borders; from white supremacy to mestizaje, Manifest Destiny, and the Mexican Revolution, distinct national mythologies mattered too. By contrast, our binational approach intends to counter nationalist and exceptionalist narratives that erase these communities from historical records. It adopts botanical, geospatial, and political analyses to map out and imagine Black environmental histories of resistance.

**Costa Chica, Guerrero—Arrieros, Oilseeds, and Dry Farming**

In February 1934, the Black nationalist leader Marcus Garvey wrote to Mexican President Abelardo Rodríguez, inviting a delegation of Afro-Mexicans to the centenary celebration of the “Emancipation of the Negroes of the Western Hemisphere.” Garvey invited dozens of countries to join him in Jamaica, to “mark the progress the race has made” (Garvey 1934, 1). It is unclear if Mexico sent a delegation to reflect “the progress the race has made” in Mexico. However, other sources show how people of African ancestry or *afrodescendientes* formed communities which shaped land and politics in Mexico. This is especially true in coastal Guerrero, where archival documents and landscapes tell a story of agrarian struggle, resistance, and Black placemaking. In this region, named after the first Afro-Indigenous president in the Americas, *afrodescendientes* used environmental knowledge to mediate their arid landscape and develop their own spaces within violent and racist political economies of extraction (Lloréns 2021).

Coastal Guerrero is an unassuming region for Black placemaking. Between the borders of Michoacán and Oaxaca, the Sierra Madre del Sur Mountain range in Guerrero hugs the Pacific Ocean, leaving a long, narrow coastal plain. Ranging from fifteen to fifty kilometers wide, this six-hundred-kilometer stretch of land has historically been one of the most important places for both Black life and independence in Mexico. Here, geologic time weathered the Sierra Madre
into a fertile coastline ripe for both plantations and politics. In political time, however, the marginalization of the region as Black and a backwater helped set into motion a new “rival geography,” which established Black territorial control at the expense of colonial power (Camp 2002).

The environment reflected and generated racial hierarchy across the entire coast (Marie-Cotton and Jerry 2013). When the disease-related deaths of millions of Indigenous people in the Americas led to labor shortages that jeopardized the colonial project, Spaniards imported nearly 200,000 people from West Africa to the colony. Spanish ideas about race and the environment created and reinforced new divisions of labor in the wake of genocide. First, the Spanish justified Black enslavement with arguments that Africans effectively resisted disease and possessed agricultural and animal husbandry capabilities; they then forcibly adopted slavery to establish plantations and large cattle ranches along the coast (Luis Velasco 1896). As ranches replaced forests, Spanish ranchers relied on Black cowboys (vaqueros) and muleteers (arrieros) who both reinforced and undermined Spanish control by sustaining slavery and supporting cimarrones, respectively (Melville 1997; Pereira 1994). In the wake of slavery’s ecological footprint, socio-environmental change also left room for Black mobility.

**Arrieros and Afro-Indigenous Ecological Knowledge of Independence**

What did Black *arrieros*, cowboys, and farmers know and see on the coast? *Arrieros* saw a wide range of unevenness. Before rails and roads, *arrieros*’ mule trains followed dry riverbeds in search of fresh water and forage. As more enslaved Black people fled Spanish haciendas, *arriero* knowledge about how to find food, water, and shelter in these ecosystems assisted maroons (runaways) in the placemaking process of forging cimarrones or *palenques* (runaway towns) (AP 342; Retchkiman 1948). By the late colonial period, nearly 85 percent of the non-Indian population of Costa Chica was of free colored and mulatto populations (Vinson III 2001). Be it on plantations or in cimarrones, *afrodescendant* maroons adopted and adapted Indigenous understandings of the environments (*Así Somos* 1992). These diasporic practices in flux ranged from sharing oral traditions among *afrodescendientes* to learning local Indigenous ideas and experimentation (AP 342; Gómez 2017; Sweet 2011).

Waterways were key to these dynamic and non-linear mixes of diasporic practices. Sixteen rivers, ten lagoons, and hundreds of streams fill this semi-arid stretch of tropical savannas, dry tropical forests, and interspersed shrublands. However, few of these water sources maintain their full volume year-round due to evaporation. The preponderance of aridity on coastal climes forced Black farmers to learn where and when to plant. In some cases, rivers and lagoons near former cotton, rice, and cacao plantations became sites of Black communities during and after slavery (Luis Velasco 1896). *Afrodescendiente arrieros* knew these waterways best of all.

Local knowledge of people and places made *afrodescendiente arrieros* popular leaders, especially during the Mexican Independence movement (1810–1821). *Arriero* independence leaders, such as Juan María Morelos, Vicente Guerrero, and Juan Álvarez marshaled their knowledge and resources to create and supply rebel armies composed of Black and Indigenous contingents. Moreover, Morelos’s call to abolish slavery and promise of citizenship for *afrodescendientes* also helped mobilize poor cotton sharercroppers to fight Spanish landowners (Guardino 1996). From hidden and remote cimarrones, other *afrodescendiente* farmers provided rebels with supplies, shelter, and secrecy (Bartra 1996).

When the Spanish executed Morelos, Guerrero and Álvarez carried on the fight for Mexican Independence victoriously. In 1828, Guerrero was elected the first Afro-Indigenous president of an American republic. However, conservative elites sidelined the president and reduced his role
in the independence movement to an insurgency in the south (Vincent 2001). Guerrero officially abolished slavery on Independence Day 1829, but in less than three months, a rebellion chased him out of Mexico City and back to his southern stronghold. This was especially concerning for national leaders in the wake of the Haitian Revolution (1791–1804). Amid growing concerns about Black political power in the Americas after the Haitian Revolution, the federal government assassinated Guerrero in 1831 and marginalized his rival geography until the twentieth century (Lasso 2007; Scott 2018). Given the erasure of Guerrero’s impact and Afro-Indigeneity, it is unlikely that Marcus Garvey knew *afrodescendiente arrieros* altered the course of Mexican history.

Politicians largely abandoned coastal Guerrero until after the Mexican Revolution (1910–1920), but *afrodescendiente* communities outlasted geographic and political isolation. Even though Vicente Guerrero’s abolition of slavery in Mexico ended the official documentation of *afrodescendientes* in Mexico for nearly 200 years, a history of their environment can provide structural glimpses into the *afrodescendiente* experience. Expanding our historical archive to include new evidence about land, ecology, and climate reveals an environmental sketch of an Afro-Indigenous region in the late nineteenth century and early twentieth century (Leal 2018).

In his 1883 book about picturesque Mexico, for instance, Manuel Rivera Cambas highlighted that “blacks and mulattos of the coast were its defenders” (Rivera 1883). Rather than being exclusive to Costa Chica, Rivera noted “a multitude of individuals of the African race in Tecpán” and highlighted *afrodescendientes* defenders in Arenal, Corral Falso, and Alcholoa, Atoyac (Rivera 1883, 361–363). In addition to noting their defense of the coast, Rivera also drew a connection between *afrodescendientes* and coconuts. Within the municipality of Tecpán, he even saw a hacienda with a “hamlet of palms; in large part of habitants of African origin” (Rivera 1883, 362). Further connecting Black history to coconuts, Rivera credited Vicente Guerrero with planting coconuts on the coast and declaring their value in “diamonds” (Rivera 1883, 365). Even though a later study would praise Juan Álvarez for introducing coconut plantations to the area, in either case, one of Guerrero’s most important crops in the twentieth and twenty-first centuries had its origins in the placemaking of *afrodescendiente arrieros* (de la Peña 1949).

In his 1896 geographic study of Guerrero, Alfonso Luis Velasco also saw blackness through agriculture. He shows a pattern of indigo cultivation, which scholars often associate with a crop of the diaspora. Beyond Costa Chica, Rivera noticed indigo along the riverbanks in every coastal district. He even noted a variety of indigo whose name reflected black placemaking: *añil cimarrón*. There was also one yucca species called “yuca cimarrona” and a variety of palm referred to as “palma cimarrona.” (Luis Velasco 1896). In regard to people, Luis Velasco saw an abundance of “good Black farmers” in each cotton-growing district. In Abasolo, Allende, and Tabares, he counted “great numbers of good black farmers” growing cotton, indigo, and occasionally coconut palms and sesame seeds; he mapped fewer Black cotton farmers in the Districts of Galeana and La Unión. Unsurprisingly, his description of Black farming was not all positive (Luis Velasco 1896). He almost always followed commentary about good Black farming with racist ideas that *afrodescendientes* were “prone to fighting and drunkenness,” “fanatics and vicious,” and “belligerent in character” (Luis Velasco 1896, 159, 167, 180). Like during the colonial period, the idea that Black farmers were both dependable and disposable remained a fixture of the coast’s political ecology in the late nineteenth and early twentieth century.

**Oilseeds and Afro-Indigenous Placemaking**

In the early winter of 1904, before the spring rainy season restricted overland travel, biologist E. W. Nelson traveled on horseback along the Pacific Coast of Guerrero from Michoacán to
Oaxaca. Nelson hoped to collect data about the local bird and plant populations. In the warm but wintery landscape of Costa Grande, he observed Afro-Indigenous women gathering palm nuts and described how it was the region’s principal industry (Nelson 1904). Since 1905 a US-owned factory in Acapulco had capitalized on these oily seeds to make soap (Nelson 1904).

You can tell the history of coastal Guerrero through the same oilseeds that afrodescendientes used to reshape their history. This historical relationship had at least four phases: first there was chocolate in the early colonial period, then cotton in the eighteenth and nineteenth centuries, and finally sesame and coconuts in the twentieth century (Martín del Campo 1953; Mombelli Piernini 2010). The coast is the home of dozens of oilseed plants with varying values to local Afro-Indigenous populations, but burgeoning soap and textile industries only profited from a handful of them—cayaco, cottonseed, sesame, and coconut (Letcher 1911; Lewis 2012; Luis Velasco 1896; Retchkiman 1948). Each of these plants had its distinct division of labor dependent on poor mestizo, Afro-Indigenous, Indigenous, or Black sharecroppers and peasants. However, no matter which oilseed a soap contained, it reflected and generated social division (Letcher 1911; McClintock 1995).

Cheap Afro-Indigenous labor attracted foreigners to the coast during the Porfiriato (1880–1910); by the late nineteenth century, US and Spanish industrialists reoriented hundreds of thousands of hectares toward the production of soap and textiles. The Miller family in Costa Chica and the Fernández family in Costa Grande, for instance, established extensive agricultural networks and factories to process raw materials into soap, vegetable oil, and textiles (Así Somos 1994; Frank Waterhouse Company’s Pacific Ports 1920). By the start of the Revolution in 1910, it was one of Mexico’s principal cotton-growing regions.

The Spanish-owned company, Bola de Nieve or Snowball, began to shift this when it arrived in the 1920s to exploit the cheap labor and drought-resistant oilseeds that made regional agriculture possible (Herrero 2004). Bola de Nieve’s demand for sesame and coconuts divided the countryside into poor farmers, landowners, and intermediaries and sent most Black-grown oilseeds away from Costa Chica and toward its factories in Iguala (Bustamante Álvarez 1996; Gomezjara 1978). According to Gonzálo Aguirre Beltrán’s fieldwork, after Black farmers set aside the first sesame furrow to their patron, the Virgin of Guadalupe, “the remaining furrows ended up in the hands of Bola de Nieve, the patron of vegetable oil” (AP 742: np; Aguirre Beltrán 1957, 109). Bola de Nieve maintained this monopoly through mestizo merchants and hoarders who kept Black farmers from selling directly to indigenous and mestizo markets (Torres García 1950). Finally, their monopoly undermined local oilseed mills and soapmakers, changing how black artisans could sell the soaps and candles they made from sesame and cuahuanche (AP 742).

At the same time, the rise of agrarismo and agrarian reform the agrarian reform movement, also changed conversations about labor exploitation and land redistribution. Most studies of agrarismo on the coast focus on Costa Grande, but Costa Chica also had strongholds of agrarismo (Encarnación Urúsia 1977; Gillingham 2021; Martínez Carbajal 1961). After the inauguration of the new Constitution in 1917, afrodescendientes began to solicit land for growing sesame and coconuts (Rafaela 1959; Silvestre 1949). Water scarcity and aridity defined solicitations. Ejidatarios (communal farmers) relied on intimate understandings of water or the lack thereof. With the expansion of agrarian reform and the growing popularity of coconuts, peasant farmers and ejidatarios sought water sources on abandoned or appropriated haciendas to grow coconuts (García Vega 1951; Smith y Hernández 1950). By 1934, 70,000 palms stood tall from San Marcos to Copala (de la Peña 1949).

Since most lands were either rain-fed or pasture, ejidatarios and other farmers concentrated the majority of coconut cultivation on riverbanks. However, riverine space was limited. Beyond
this limited riverine space, farmers found or made charcos (pools) for agriculture (Smith y Hernández 1950). Pools were especially popular in Cuajinicuilapa, where local high levels of floods and erosion limited the amount of healthy and arable land (AP 136). Even though farmers had to locate these pools in swampy areas, charcos became very fertile, flat, and humid during the dry season from November to April (Así Somos 1992). For instance, Black farmers converted one alligator-infested pool in Ometepec called Charco de la Puerta into an ejido. Other notable regional pools included Charco de la Bujía, Charco del Venado, and Charco de Carrizo (Así Somos 1992; López Barroso 1967).

Black farmers also transformed humid and fertile riverbeds called chagües into arable plots during the dry season. Since the soil conserves humidity during the winter, farmers lucky enough to have access to chagües would plant corn and sesame in September to harvest in February. The best sesame was planted with the last rains of the year and harvested in the middle of the dry season to desiccate. Unlike milpas, which use fire to regain fertility after two years, chagües are revitalized annually by floodwaters that leave a nutritious layer of silt on the sandy-textured soil (Aguirre Beltrán 1957). Given Cuajinicuilapa’s geomorphology as a protracted floodplain, black ejidatarios in San Nicolás started using a system of chagües to grow corn, beans, squash, and tobacco (Hoffman 2007). Some chagües like Santa Rosa in Copala resembled “small islets [that] form in the estuaries,” but they varied a lot “with the abundance and scarcity of the rains”; other chagües like La Yeguda, Copala were even irrigated (García Vega 1951). Few chagüe plots were large or humid enough to feed an entire family for a year, but they served as necessary complementary spaces for supplemental agriculture.

Figure 1. Map of Land and Coconut Ownership in Copala, Early 1950s (AGA map recreated by Alissa Ujie Diamond).
These dry farming practices helped transform Costa Chica into one of Mexico’s principal producers of sesame and coconuts, but they did not protect communities from economic, social, and ecological violence (Aguirre Beltrán 1957; González Galván 1954; Torres García 1950). One report described palm production as an “industry of hunger” (AP 136: np). First, oilseed hoarders and landowners siphoned profits from poor sesame and coconut ejidatarios. Second, large landholders like the Ventura family formed armed guardias blancas (armed guards) to intimidate, displace, and murder ejidatarios. Poor coconut farmers fought back and even requested federal support, but many guardias blancas had the support of state-level and local government officials. According to one ejidatario from Monte Alto, San Marcos, “Guer­rero authorities [were] exclusively at the service of land ownership and capitalism” (López 1938: np). Racism compounded this social violence, because the state pathologized communities as lacking, “isolated,” and “unevolved” (AP 742: np). Racism undergirded the state’s very notion of modernity; officials ironically insisted that “there is no racial discrimination, but there are some notable antagonisms that logically affect less evolved groups or individuals” (AP 742: np).

The dual-threat assault of guardias blancas and racism inspired a third state-sanctioned problem: colonization. Starting in 1947, the government began encouraging private holders to colonize “abandoned lands” and notably senator Nabor A. Ojeda believed that militarization and colonization could bring socio-economic development to his native Costa Chica (Ojeda 1947). The coast’s legacy of anti-agrarian landowners convinced Ojeda that only an influx of soldiers and colonists could modernize the region. Ojeda accused local officials of environmental negligence and corruption which “shackled” ejidatarios to a system of landlords, undermining economic development (Ojeda 1947).
Ojeda insisted to President Alemán that the newly formed National Commission of Colonization (CNC) could bring credit, colonies, and control to the region (Ojeda 1947). The CNC hoped to relocate primarily mestizo populations to “under-exploited,” “backward,” and sparsely populated areas (Aboites Aguilar 2019). For Ojeda and other officials, Costa Chica was as good as abandoned, a rich land wasted by poor people and poorer local governance. Within this “pathology of deficit,” the senator recommended that the Secretary of Agriculture and the CNC establish a fourth military zone in Costa Chica and spend ten million pesos to invest in plantations of sesame, citrus trees, bananas, and coconuts, of course (Lloréns 2021; Ojeda 1947). It is unclear how this military colonization took place, but it is clear that oilseeds and racism influenced where and how the government established colonies in Costa Chica. With Costa Chica ejidos displaced and discredited, the CNC helped Bola de Nieve transform part of La Petaca in Cuajinicuilapa into the “most important” sesame plantations at the height of the oilseed boom (AP 136: np).

Despite the hardships of oilseed-based colonialism, capitalism, and colonization, afrodescendientes did more than survive; they raised oilseed crops, built communities, and defended their claims to land and equal protection under the law (Moreno-Tabarez 2020). Afrodescendiente maroon ecologies were not always pretty or reciprocal, but they shaped the political ecology of coastal Guerrero. As of 2020, 58.7 percent of residents in Copala and 79.9 percent of cuileños identified themselves as afrodescendiente (Comisión Cultural, Encuentro de Pueblos Negros, Censo 2020). Oilseeds may have constricted black life in Guerrero since the colonial period, but they have always been more than “industries of hunger”; oilseeds were, and still are, conduits of black historical action and survival on the coast (AP 136; Comité Técnico Comunitario del Ejido de Marquelia 2019).

**Blackdom, New Mexico—Black Placemaking through a Shift in Space**

From reconstruction (circa 1865) to the early 1900s, many Black Americans left the Southern US to cultivate their own sovereign spaces during the All-Black Town Movement. Anti-Black violence, poverty, and Jim Crow laws were strong drivers of Black migrations (Winsett 2012). However, these were not the sole drivers of Black migration. Ambition and ingenuity also led Black Americans to practice Black placemaking, and ultimately defined the Black town movement (Nelson 2015). Many investigations of the Black Town Movement focus on Black homesteader communities in Oklahoma and Kansas due to the high concentration of settlements in these areas (Baton and Walt 1996). However, Black settlements in New Mexico provide a unique case study for Black placemaking given severe climatic stressors—namely aridity, the race politics of the territory, and the research deficiency on the Black experience in this space. As Black settlement designed to sustain its community with agriculture, Blackdom, New Mexico provides a crucial perspective on the role farming played in Black placemaking, which has often been neglected in Black narratives.

During his service as a wagoner in the US–Mexico War with the Missouri Volunteer battalion, William Henry Boyer first identified New Mexico as a hospitable environment of vast landscapes and reduced oppression. Although the territory of New Mexico did institute slave codes for two years from 1859 to 1861, these codes were an experimental political maneuver before the Civil War that went largely unenforced (Stegmaier 2013). Henry Boyer returned to Georgia and farmed after his service, but he dreamt of settling in that land of no Jim Crow laws (Baton and Walt 1996; Berg and Walton 2013; Spivey 2001). His son, Francis “Frank” M. Boyer, like his father, obtained first-hand experience of the New Mexican desert’s potential during his time in
the 24th infantry (Miller 2018). Frank, equipped with the knowledge of these two sets of experiences, his financial ambition, and the desire for a Black utopia without the restriction of Jim Crow laws, carried this vision on foot through his 2,000-mile journey from the subtropical climate of Pelham, Georgia to the windy, arid Pecos Valley of New Mexico (Baton and Walt 1996).

Twelve and a half miles west of the Pecos River in the expanse of the Chihuahuan semi-desert grasslands, the idea of Blackdom came to fruition when the community formed in about 1908 (Friefeld et al. 2019; Spivey 2001). It would be the territory’s first all-Black town. But not without serious effort. Homesteading in New Mexico necessitated that people both disperse across vast landscapes and become rooted in their novel environment. The Homestead Act of 1862 also required a filing fee, continuous occupation for five years, and that the property be improved either by cultivation or settlement, both of which demanded startup capital (Nelson 2015; Shanks 2005). Such a financial foundation manifested in the form of the Blackdom Townsite Company. Frank Boyer, along with twelve other Black men, instituted the company with a putative capitalizing of $10,000 in 1903. The Articles of Incorporation of Blackdom Townsite Company (1903) explicitly stated their ambition of “maintain[ing] a colony of Negroes by means of cultivations of crops” and provided the much-needed capital to grow the town and attract newcomers. After a successful advertising campaign (Nelson 2015), these newcomers—teachers, entrepreneurs, and mostly former sharecroppers—traversed this long journey from places like Oklahoma, Mississippi, and Kentucky to establish the all-Black town (Gibson 1986; Baton and Walt 1996; Cranston 2011). In the case of Blackdom, the resoluteness of their residents transformed an idea into a place of empowerment and autonomy for all who made the journey. This would not be easy.

Blackdom residents would be faced with an imperative decision—the location of their community. Blackdom was settled in the southeastern portion of the territory, where the Pecos River channeled through and artesian waters slept underground. Racism marginalized Blackdom too far west to draw from the natural waters of the Pecos River, for the white residents of Dexter, New Mexico demanded Blackdom residents move elsewhere from their original chosen location (Fleming 1975). This would have dire consequences when drought came. Furthermore, the limestone-derived calcareous soils of the region and low precipitation levels challenged Blackdom residents and their crops. To mediate this racial and climatic adversity, Blackdom residents adopted dryland farming techniques and drew on environmental knowledge to select drought-adapted crops. Despite these obstacles, they created some semblance of autonomy through their response to the environmental stressors, their conceptualization of their community, and their selection of their farming techniques.

Targeted crop selection was crucial in this harsh environment and Blackdom residents were successful in cultivating several crops. Frank Boyer leveraged his botanical knowledge to pilot his alfalfa (Medicago sativa L.) farming on his homestead in Dexter, New Mexico before initiating the settlement of Blackdom (Berg and Walton 2013). Frank Boyer and his sons had the largest hay harvest business in Dexter, and they capitalized well enough on their alfalfa and apple crops to make small loans to fellow farmers and ranchers. Although their good nature would leave them overextended when the drought came (Baton and Walt 1996), their alfalfa farming provided a crucial lesson on specific farming techniques in arid environments, which would be necessary for the successful settlement of Blackdom.

The development of alfalfa as a major American crop started in the American West in the late nineteenth century (Putnam et al. 2001) and it remains New Mexico’s top cash crop (United States Department of Agriculture, National Agricultural Statistics Service 2020). Alfalfa was the source of economic stability for many homesteaders and western farmers due to its success as a dryland crop and its tolerance for a wide range of soils (Putman et al. 2001). Furthermore,
alfalfa is well adapted to the arid conditions of the Pecos Valley as a deep-rooted perennial, a similar adaptation seen in many oilseed plants. Research shows that non-irrigated alfalfa can have similar yields to irrigated alfalfa when the water table is within 2.7 meters of the soil surface (Campbell et al. 1960). In the absence of a water table, alfalfa can also draw on soil moisture up to 4 meters in depth (Kohl and Kolar 1976). Accessing water through the stored soil moisture could act as a buffer during drought years, which would be vital to the residents of Blackdom. In addition to the adaptations of alfalfa, the soil porosity conferred by the loamy Quaternary alluvium deposits of the Pecos River (Fiedler and Nye 1933) enabled the retention of sufficient soil moisture without sacrificing the drainage alfalfa requires.

Beyond alfalfa, Blackdom residents successfully instituted and maintained community gardens and orchards (Berg and Walton 2013; M. Collins 1913; Cranston 2011; Price 2003). An important space of resistance for Blackdom was their orchard of small fruit trees, which through their shared labor produced apples, plums, and peaches (M. Collins 1913; Price 2003; Winsett 2012). In their gardens, Blackdom residents also grew corn, cantaloupe, onions, beets, tomatoes, sunflowers, and lettuce intermittently (Spivey 2001; Berg and Walton 2013; Miller 2018; Nelson 2015). Records illustrate the communal sharing of the produce of these gardens, namely watermelon (Proffit 1910). It was not all egalitarian. A crux of human society is the sharing of resources (Kameda et al. 2005), and the town of Blackdom was no exception. Communal work for communal harvest, that is, in urban and community gardens, appears commonly in Black communities that have shifted in space. Cultivating this space enables the retention of botan-
ical knowledge systems, instills the values of land stewardship, and provides access to healthy foods (Penniman 2018). For example, the Detroit Black Community Food Security network has served as a vehicle for urban food sovereignty, a site of Black resistance, and a method of Black placemaking (White 2018). Here, Blackdom residents also exhibited the same contemporary method of Black placemaking evident under today’s stressors.

A crucial plant to the nourishment and resilience of the African diaspora is *Sorghum bicolor* (L.) Moench., a drought-adapted species first cultivated in Africa and subsequently introduced to the Americas through the transatlantic slave trade. This species has a significant legacy in the African diaspora that was integrally tied to the survival of enslaved African people and regularly grown in subsistence plots (Carney 2013). This was the predominant crop grown by Blackdom farmers. Four different homestead patent testimony records (cane, feterite, kaffir, and milo maize) of *Sorghum bicolor* are present in Blackdom. These distinctions, for instance cane vs. feterite, indicate that Blackdom farmers may have been growing different cultivars of *Sorghum* and thus listed each crop separately (E. Boyer 1915; E. T. Boyer 1920; M. Collins 1913; Gates 1914; Proffit 1910; Ragsdale 1912). In the Great Plains region, which extends to eastern New Mexico (Cunfer 2005), *Sorghum bicolor* cv. Feterita was especially vital during the early 1900s due to its productivity under limited rainfall conditions (Swanson 1926). Ella Boyer, one of the three board members of the Blackdom Townsite Company in 1911 and Frank Boyer’s wife, grew this particular cultivar on her 50 acres of land in Blackdom (E. Boyer 1915). Additional research might elucidate whether Blackdom residents were already familiar with *Sorghum* or learned of its suitability *in situ*. In any case, the application of these drought-tolerant cultivars demonstrated that Blackdom farmers understood the necessity for crops that were adapted to arid environments.

Blackdom residents faced the same environmental stressor as *Sorghum*: a lack of water. From 1895 to 1930, the average annual rainfall of the area was 13.4 inches (Friefeld et al. 2019; PRISM Climate Group 2021), but an estimated annual rainfall of 16 inches was necessary for this region for dryland farming (Creswell and Martin 1998; Wiseman 2001). Homestead patent testimonies indicate that several Blackdom farmers had successful crops intermittently throughout the years, but crop failures were reported during the years 1910, 1912, and 1917, which were the hottest and driest years in Blackdom’s history (Figure 4). During the drought of 1917, for instance, records indicate that only six inches of precipitation fell in a year, with the “maximum temperature” of 76°F (the annual average of the daily maximum temperatures) (PRISM Climate Group 2021). Only two years (1911 and 1915) produced enough rainfall for dryland cultivation and only marginally at 17 inches (PRISM Climate Group 2021). Even in these “good” rainfall years, average maximum temperatures across the year were still high at 76°F and 75°F, respectively. Combined with the high winds of the region (Spurrier 1920; Wagoner 1915, Gibson 1986), desert heat causes excessive evaporation which only exacerbates the lack of water available to crops (Creswell and Martin 1998). Living well below the minimum precipitation levels for dryland farming to succeed, it is a wonder that Blackdom residents were able to cultivate any crops throughout the town’s duration.

Given the low levels of precipitation, Blackdom residents’ ability to persist in place was reliant on access to supplemental water. Some residents attempted to haul water in barrels, but this was inefficient and labor intensive (Gibson 1986, Goble 2004). On the discovery of artesian waters for irrigation in 1891, the Pecos Valley experienced an agricultural boom (Brown 1936), and farmers withdrew high rates of artesian waters with their numerous shallow groundwater and artesian wells. As a result, many wells required the use of a water pump to increase natural flow (Brown 1936; Hood et al. 1960). Frank Boyer recognized the importance of obtaining a water pump during his early homesteading days in Dexter. In a letter to a water pump supplier, he
leveraged his position as the president of the Blackdom Townsite Company and his successful harvests of cantaloupes and tomato to vie for a loan. He aimed to purchase an engine pump to access the artesian waters (Boyer 1904; Nelson 2015), and wells were quite expensive at roughly $180 for a standard, shallow well and upwards of $4,000 for an artesian well (Price 2003; Winsett 2012). Many Blackdom residents could not afford to pay such high costs necessary for digging deep wells.

The average well depth for the towns of Roswell and Hagerman is about 76 meters and thus sufficient to penetrate the Quaternary alluvium deposits of the Pecos River (Fiedler and Nye 1933). Blackdom residents attempted to dig their wells, but “couldn’t get the well through cause of the rock . . . and I mean it was solid rock!” (Baton and Walt 1996, 8). Several Blackdom residents reported having wells during their homestead testimonies, but these wells were often hand or windmill pumped and did not generate enough water for large-scale agricultural purposes (Eubank 1911; Gates 1914; Ragsdale 1912). Ella Boyer was exceptional. She cultivated 50 acres with assistance from two miles of irrigated ditches and her pumping plant. As a result of her investment, she cultivated the highest recorded acreage of the Blackdom farmers (E. Boyer 1915). Unfortunately, she was not immune to the consequences of drought, and her full irrigation plan never came to fruition. The high number of artesian wells had lowered the water pressure and supply (E. Boyer 1915; Hood et al. 1960) and caused the soil to become increasingly

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**Figure 4.** Graph of Recorded Precipitation in Blackdom, New Mexico, USA.

Blackdom Annual Precipitation & Average Maximum Temperature 1900–1928

Notes: Inches (y-axis), year (x-axis). Dashed blue line: minimum annual precipitation for dryland farming. Point colors: the mean of the daily maximum temperature across a year is high at above 75°F (red), or cool at below 75°F (blue). Data obtained from PRISM Climate Group for Lat. 33.1636 Long. −104.5089, elevation 3632ft and graphed in R version 4.0.3 using the package ggplot2. Adapted from Wiseman 2001.
alkaline (Baton and Walt 1996; Hood et al. 1960). For this reason, the New Mexico State legislature took measures to limit the number of wells (Price 2003; Spivey 2001), and the state engineer required a permit before new well drilling. This evolved into the closure of the artesian aquifer in 1931 (Miller 2018; Reynolds 2017) and thus Blackdom residents would have no means for accessing a vital resource—water.

Even before the prohibition of artesian well drilling in 1931, Blackdom residents experienced a large environmental shift from the subtropical climates of the American South when they reached the Pecos Valley of arid New Mexico. They were forced to cope with a new environment and employed transgenerational farming knowledge, targeted crop selection, and communal labor. Although their community orchard was bolstered by their shared commitment, the apple orchard would succumb to a worm infestation in 1916 (Berg and Walton 2013; Cranston 2011; Spivey 2001). When faced with drought in the later years, several Blackdom residents applied for a reduction in the required cultivation area for their homestead patents. In place of crop cultivation, they proposed utilizing the land for cattle grazing on the native grasses (Ragsdale 1921; Smith 1918; Spurrier 1920). Given the low precipitation levels, several of these applications succeeded. Also during this time, many members of the town pooled their drought-stricken, high alkali land together in the wake of the oil boom in New Mexico to form the Blackdom Oil Company in 1919 (Nelson 2015). Despite these attempts, untimely years of precipitation well below the necessary levels forced Blackdom residents to shift in space. Several members moved to Vado, New Mexico, a more fertile area they could irrigate, and continued supporting themselves through agriculture. Ultimately, the Blackdom Oil Company equipped many of Blackdom residents with new financial freedom. They dispersed throughout the state of New Mexico and abandoned the town of Blackdom circa 1928. Despite its demise, the legacy of Blackdom is New Mexican history. The town (and its dry farming) were footholds for the settlement and the survival of Black families in Vado, New Mexico, and served as an incubator for sovereignty.

**Conclusion**

Future climate models indicate that dryland ecosystems throughout the globe will expand as our climate continues to become warmer and more arid, while climate variability increases (Rudgers et al. 2018). Under climate change, marginalized communities will be significantly predisposed to climate disruption and will face similar challenges that plagued the community of Blackdom, New Mexico in the past and continue to hurt communities in Costa Chica, Mexico today. Understanding these histories of the past and present not only provides a visualization for the consequences of altered ecosystems, but also highlights the need for environmental justice and to combat the environmental racism that unevenly predisposes Black communities to the consequences of climate change. Nevertheless, *Cimarronaje* and Black land relations, local and situated as they may be, also have been and will be world-making phenomena.

Whether or not Black communities in the diaspora persist in place or shift in space, their knowledge of the environment mattered for survival and Black placemaking. In both case studies—Costa Chica, Guerrero (Mexico) and Blackdom, New Mexico (USA)—Black people adopted dry farming in arid ecosystems to make *cimarronaje* (or collective and situated Black placemaking). Here, we highlighted that *cimarronaje* was accomplished through numerous ways: dryland farming, targeted crop selection, historical knowledge systems, water conservation, and sheer perseverance. A reexamination of these communities under differential definitions of “success” provides a novel interpretation of these histories. For example, prior research on Blackdom, New Mexico often denotes the town as a failure (Miller 2018; Price 2003). How-
ever, this negates how Blackdom farmers were able to cultivate crops well below the minimum precipitation requirements for dryland farming. It also fails to acknowledge how Blackdom served as a financial vehicle to enable residents to shift in space and become a transitory, sovereign, and empowered space for Black people to live and Black children to be educated in. Over a longer period, environmental knowledge also helped the Black community form in Costa Chica. Oilseed cultivation was key to this community development, but proximity to oilseeds also cycled Black zones of refuge in and out of exploitation. Histories of agrarian reform and environmental change in Guerrero that do not include Costa Chica systematically ignore the role that afrodescendientes have played in shaping the region's oilseed economy through their environmental knowledge and labor. Furthermore, excluding afrodescendientes from the larger regional narrative also precludes social and environmental justice for these communities.

To rectify the erasure and dearth of these histories and better understand Black placemaking in arid environments, we employed traditional and nontraditional approaches. Namely, we drew on biology to supplement our understanding of community spatial and temporal dynamics while framing the ecology of those systems. By examining the binational biogeography of these case studies, we illustrate that these ecosystem challenges are not unique across the African diaspora, and under anthropogenic climate change they will only broaden in their scope. In addition to the oral histories, newspaper articles, and government documents, an understanding of the biology of the organisms that were integrally tied to these communities’ livelihoods provides a unique insight. It frames the day-to-day life that is sometimes absent from oral records: the consequential biological cascades in the absence of rain, the evolutionary history that shaped the subsistence of the food we eat, and the intimate details of the land. It is only through the integration of multiple approaches, disciplines, and perspectives that we can generate robust narratives and elucidate the histories that were never recorded.

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