

Black Family Forest Owners in the Southeastern United States: A Case Study in Six Counties

Amanda Robillard,^{1,*} Cassandra Johnson Gaither,² John Schelhas,² and Brett J. Butler³

¹University of Massachusetts Amherst Family Forest Research Center, 160 Holdsworth Way, Amherst, MA 01003, USA (arobillard@umass.edu).

²USDA Forest Service, Southern Research Station, 320 Green Street, Athens, GA 30602, USA (cassandra.johnson@usda.gov; john.schelhas@usda.gov).

³USDA Forest Service, Northern Research Station, 160 Holdsworth Way, Amherst, MA 01003, USA (brett.butler2@usda.gov).

*Corresponding author email: arobillard@umass.edu

Abstract

The USDA Forest Service, National Woodland Owner Survey asks family forest owners (FFOs) about their attitudes and intentions regarding their forestland. Historically, the number of responses from Black or African American FFOs has been very low, but it is uncertain whether this is because of nonresponse bias or that there are relatively few Black FFOs. To get a better understanding of these FFOs and to test a method to increase response rates, an intensified survey effort was conducted in three southern states: Alabama, North Carolina, and South Carolina. Analyses indicate that Black FFOs have slightly different objectives, activities, and ownership structure for their forestland than their White counterparts, who have traditionally represented the majority of FFOs.

Study Implications: By conducting an experiment to increase response rates from Black family forest owners to the National Woodland Owner Survey, we find traditional methodology is not effective. More importantly, we see this group has moderately different responses than their White counterparts. This has wide ranging implications for landowner assistance programs and other initiatives that have been designed on the premise that we are accurately capturing responses from all woodland owners.

Keywords: Black woodland owners, National Woodland Owner Survey, response rates

Thirty-nine percent of the woodlands in the United States are owned by families, individuals, trusts, estates, or family partnerships that own at least 1 acre of woodland (Butler and Caputo 2021; Butler et al. 2021a). This group is collectively known as family forest owners (FFOs), and they have the power to greatly influence the future of this critical resource. The USDA Forest Service's National Woodland Owner Survey (NWOS) has collected tens of thousands of responses from FFOs regarding their attitudes and behaviors about their forestland since the late 1970s. Over the past 40+ years, the NWOS has consistently found that the majority of respondents are older white males. Results from the 2018 iteration of the NWOS revealed that only 1% of respondents self-identified as Black or African American, either solely or in combination with another race or ethnicity, for example, Hispanic and Black (Butler et al. 2021b). This is a much smaller proportion compared with the rural population, where 7.8% identify as Black or African American, again either solely or in combination with another race or ethnicity (DecennialUS Census 2020). The discrepancy between forest ownership statistics and other rural landowners may be due to a lower percentage of Black people owning forestland, a hesitancy of Black FFOs to respond to the NWOS (or provide information on their race), other reasons, or combination thereof. These findings led us to ask the question: are there nonresponse bi-

ases for Black FFOs and can response rate be improved for this group?

Using Black farmers/primary operators in the United States as a proxy for Black woodland owners may provide some context in terms of actual Black woodland owners. Although this comparison is complicated by differences in statistics reported for farm operators and farm owners or landlords and the different levels of details available for the two groups, we may still be able to draw some conclusions. For example, 1.4% of the farm operators are Black or African American (US Census of Agriculture 2017, Table 51), a similar percentage (1%) as reported by the 2018 NWOS (Butler et al. 2021b).

It may be that there is hesitation by some people to respond to race and ethnicity questions on surveys, potentially biasing results (Lor et al. 2017). Differential response rates would result in a higher representation of one group and under-counting of another. The 2018 NWOS has a 40% cooperation rate and a 17% item nonresponse for the race question, and some respondents include written comments asking why we ask for this information and how it is pertinent, suggesting some may not be willing to identify as one racial group or another. This has been shown throughout several years of data collection of the NWOS, where numerous comments annually are included next to the unanswered race

question, indicating reluctance. In addition to this potential hesitation to respond to these questions, respondents may also be faced with how to respond. Following the example of the US Census, race and ethnicity (Hispanic or non-Hispanic) are asked as separate questions on the NWOS and respondents may indicate one or more races in addition to their ethnicity. This may contribute to these questions being challenging, as well as sensitive and complicated, for some people to answer (Schelhas 2002).

The low numbers of FFO respondents who self-identify as Black, in tandem with the high proportion of item nonresponse to the question on race, leads us to ask the questions: are Black FFOs choosing not to participate, or are there simply a relatively low number of Black FFOs in the United States? In terms of the former, Black Americans have historically and are currently subject to numerous forms of discrimination, which may have fostered a distrust of the government and may play a role in low response rates by this group (Gordon et al. 2013). This same legacy of discrimination may also be an obstacle to owning and retaining land outright (Hitchner et al. 2017). Other factors that may also be contributing to lower proportions of Black FFOs include the migration of millions of African Americans out of the rural South during the 20th century, leading to loss of family lands (Gilbert et al. 2002a; McGee and Boone 1979) and heirs' property situations where there is no clear title to the land (Dyer et al. 2009).

As a result of the discrimination and oppression Black Americans have been and are subject to, in addition to the challenges of owning land listed above, those that do have land are sometimes stuck in a tangle of heirs' property issues. Heirs' property classification typically occurs when property is passed down through generations without a will or clear title. Because there is no will, ownership becomes fractionated as all heirs become owners and, at least theoretically, have a say in what happens on and to the land—tenancy in common. In reality, some heirs may not even know they are owners (Baab 2011). A high number of owners can be problematic because consensus on how land is managed can be difficult, with varied goals and expectations, and there may be no clear leader or structure for these decisions (Dyer and Bailey 2008; Gaither et al. 2019; Gilbert et al. 2002a). Beyond the problems numerous owners cause, heirs' properties may not be eligible for landowner assistance programs. These programs aim to help ease tax burden and aid in conservation planning, among other goals, and can often move forests into a state of profitability (Haines 1995). Another way heirs' properties are problematic is that without title, the land cannot be used as collateral for loans, and resources such as timber can be difficult if not impossible to sell (Hitchner et al. 2017).

Along with hesitancy to respond to demographic portions of surveys and heirs' property problems making it difficult to determine who should respond, it is possible that low response rate by Black FFOs is fundamentally a function of the number of Black FFOs. There have been a handful of studies that have attempted to determine the percentage of forestland held by these owners, but most often, case studies or cognitive interviews have been conducted and population-level estimates remain elusive. Most studies on this topic rely on purposive sampling with relatively low numbers (Goyke and Dwivedi 2021). Gan and Kolison (1999), through personal interviews, found that "a significant portion" of the nonindustrial private forest in two Alabama counties were held by Black owners.

In 1999, it was estimated that 1.2% of private agricultural landowners were Black (Gilbert et al. 2002b).

Given the scarcity of Black FFOs represented in the NWOS, an intensified effort to sample this population was conducted in 2018. This effort aimed to quantify potential nonresponse biases among Black FFOs and evaluate a method for increasing response rates among this group of owners. Obtaining a sufficient sample size for this population is important for many analyses and will provide information on how to best move forward to serve this underrepresented group. In addition to the methodological implications, some insights can be gained on how Black FFO attitudes and behaviors differ from the majority White FFOs.

Methods

In September 2018, forestland owners in three southern states, Alabama, North Carolina, and South Carolina, were invited to participate in this special study associated with the NWOS. The NWOS is a congressionally mandated program that follows the procedures laid out by the Paperwork Reduction Act administered by the Office of Budget and Management (OMB approval no. 0596-0078), and the study was approved by the Institutional Review Board of the University of Massachusetts Amherst (UMass IRB approval no. 684 2016-2908). The sampling for this special study followed the standard NWOS procedure, where probability of inclusion is a function of size of forest holdings (Butler and Caputo 2021). The implementation involved a modified version of the tailored design method (Dillman et al. 2014), including up to four contacts per potential respondent. For details of sample selection, implementation, and estimation procedures, see Butler et al. (2021b).

The novelty of this study stems from an intensified sampling in focused regions of the United States and testing of a method to increase response rates. To focus on areas with potentially higher concentrations of Black FFOs, two counties from each state were selected, with a similar number of farms with Black principal operators for treatment counties. This was used as a proxy for forestland owners, as historically, Black farm and forest owners have experienced similar rates of land loss (Butler et al. 2020). Furthermore, the treatment counties were selected based on where local partners already had relationships with the Black landowner community. Counties were paired so that one county served as the control and the other received the outreach campaign treatment. In each of the treatment counties, the outreach campaign was conducted prior to survey mail-out to convey legitimacy and importance to the survey and foster trust with Black landowners, with the aim of increasing response rates. This outreach was led by organizations that collaborate with Black landowners in a number of ways, from assisting with lands held as heirs' properties to helping set up timber sales. The groups that participated in outreach were The Center for Heirs' Property Preservation (South Carolina), the Roanoke Electric Cooperative (North Carolina), and the Limited Resource Landowner Education & Assistance Network (Alabama). Black residents in these counties were notified through emails, blog posts, or flyers that questionnaires were on the way and were encouraged to participate. Control counties received no such direct outreach.

The sample included 1,833 randomly selected forestland owners from across the six counties. This sample size was

selected based on past NWOS projects where 1,500 FFOs were enough to produce an adequate response rate. The names and addresses were randomly selected from a sampling grid laid across the chosen counties within which a random point was generated and determined to be forested or not. Once the forested points were produced, the ownership record was obtained from publicly available property tax records.

To test for nonresponse bias, telephone interviews were conducted and 16% of the nonrespondents were successfully contacted. No discernible differences between those who responded by mail and those respondents from phone interviews were detected and no nonresponse adjustments were made.

Data Analysis

Responses were filtered by ownership such that only those classified as FFOs were analyzed. After filtering for FFOs, respondents were then grouped by race based on their answer to the question in the survey “what is your race?”. We created two groups—one group for respondents who selected “White” and one for those who selected “Black or African American”. For two questions (why do you own your wooded land and what are your concerns for your wooded land), a 5-point Likert-scale was used to measure attitudes and perceptions. For these questions, responses that were “very important/important” or “great concern/concern” were binned and those that were “moderately important/of little importance/not important/not applicable” or “moderate concern/of little concern/no concern/not applicable” were binned so that data could be analyzed as binary responses. Error bars in the charts represent 95% confidence intervals calculated as standard errors times 1.96. Two statistical tests were performed to assess differences between White and Black respondents, a χ^2 test of independence and, where sample sizes within cells were too small, a Fisher’s exact test. For the nonresponse assessment of whether there were differences between mail and phone respondents, a χ^2 test was used and, where appropriate, the Wilcoxon rank sum test. All analyses were conducted in the R statistical environment (R core team 2022).

Results

Out of the 1,833 surveys sent, there were 500 “good” responses. Good responses were those that answered as greater than or equal to 1 for number of wooded acres owned. This equated to a response rate of 27.3% and, after accounting for the undeliverable and “no contact” surveys (a total of 175), a cooperation rate of 30.2%. After filtering data so that only ownerships classified as FFOs were included, we ended up with 459 complete and usable responses from all responses. A total of 409 respondents self-identified as White, twenty-three as Black/African American, three as Native American, three as Native American and White, which were included in the White results, and twenty-four respondents who did not answer this question. Of the Black/African American respondents, seventeen were from the treatment group and six were from the nontreatment group. There were no significant differences between treatment and nontreatment county cooperation rates (Table 1), and data were combined for the analyses presented below.

There was a significant difference in average size of forest holdings between White and Black FFOs. Size of holdings has been shown to be a major predictor or correlate with

Table 1. Cooperation rates for six counties in the southeastern United States. Asterisks denote counties that received outreach treatments. The χ^2 p-values show no differences between treatment types.

State	County	Cooperation rate	χ^2 p-value
Alabama	Madison	0.27	0.1211
Alabama	Marengo *	0.4	
North Carolina	Halifax *	0.28	
North Carolina	Sampson	0.21	
South Carolina	Aiken	0.31	0.1581
South Carolina	Williamsburg *	0.32	

many landowner attributes (Butler et al. 2021a; Ma et al. 2012). To test whether there were differences between groups that were caused by size of holdings, we ran an analysis comparing Black and White FFOs with the same range of size of holdings (1–131 ac). There were significant differences in activities that are associated with larger parcels, such as road or trail construction, removal of invasive plant and insect species, and cutting for personal use or hunting; however, these are activities most commonly associated with larger holdings and infer that size, rather than race, causes the significant relationship.

There are many commonalities and some potentially important dissimilarities between the Black and White respondents. The Black respondents had forested acreages that ranged from 1 to 130 ac (median = 18 ac) whereas White respondents’ acreages ranged from 1 to 57,131 ac (median = 150 ac), and these differences in size of holdings were significantly different. Black respondents ranged in age from 49 to 84 years with mean age of 69 years. White owners ranged in age from 30 to 96 years with a mean age of 67 years. Black respondents were 65.2% male and 34.8% female whereas White respondents were 73.4% male and 26.7% female. The level of educational attainment was similar between Black and White respondents, with 52% and 58% having bachelor’s degrees or higher, respectively (figure 1).

Forty-eight percent of Black respondents owned their forestland with family other than spouse, which was significantly ($p < 0.001$) higher than the 10% of White respondents who reported owning in this category (figure 2).

Fifty-seven percent of Black respondents obtained their forestland through inheritance rather than through purchase (43%), and none received their land as a gift. White respondents reported their forestlands were acquired through purchase more often than through inheritance (figure 3). A χ^2 test between the three acquisition methods showed a significant relationship only for forestland acquired through purchase ($p = 0.015$).

Respondents were asked whether their primary residence is on or within a mile of their forestland in the state. Fifty-seven percent of Black respondents answered that they did not live on or within a mile of their forestland and are therefore absentee owners. Half of White respondents reported not living on their land or within a mile (figure 4) and this was not significantly different.

Respondents were asked how important various reasons are for owning their forestland (Table 2). Seventy-eight percent

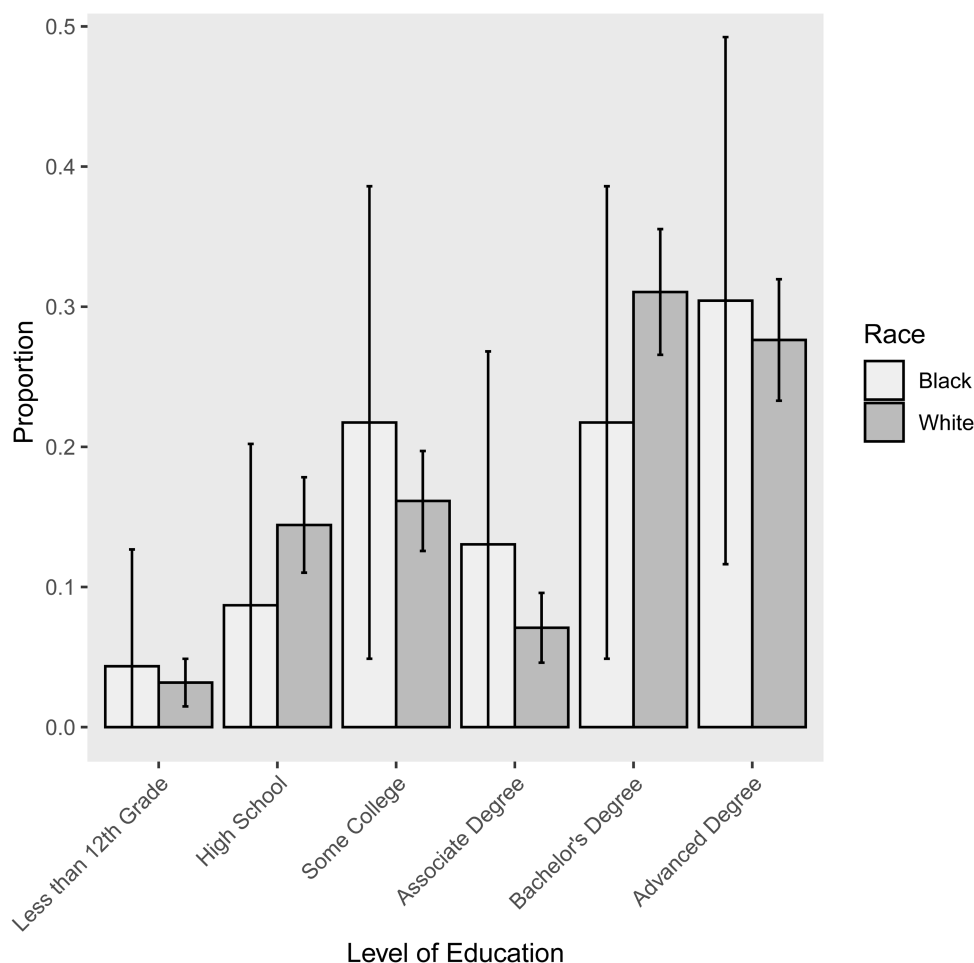


Figure 1. Proportion of FFOs in six selected counties in the southeastern United States in 2018 by education level and race. Error bars represent 95% confidence intervals.

of Black respondents reported that they owned their land ‘to pass on to their heirs’ as very important or important, 70% indicated that they owned their forestland for investment and 48% for timber products. There was overlap between White and Black respondents, where a high percentage reported to pass on to heirs and investment as important or very important (figure 5); however, White FFOs indicated that they were more likely to own for aesthetic, nature-driven, recreational, or subsistence reasons, such as to protect wildlife and nature, beauty and privacy, or hunting.

When Black respondents were asked what activities they engaged in on their forestland in the past 5 years (Table 3), 52% reported that they had not performed any of the listed forest management activities ($p < 0.001$). When asked if they had cut trees for sale, 26% of Black respondents indicated that they had done this activity in the past 5 years compared with 45% of White respondents (figure 6); however, there was no significant difference between the two values ($p = 0.169$). Nine percent of Black respondents reported having constructed trails compared with 29% of White respondents, a significant difference ($p = 0.04$). Aligning with findings from reasons for owning land, there was a significant difference between White and Black respondents in terms of ‘Improving wildlife habitat’ ($p < 0.001$) in the past 5 years on their wooded land, where only 4% of Black respondents engaged in this activity (Table 3).

In terms of future (next 5 years) plans for their woodlands, Black woodland owners intended to follow similar patterns of activities as they had in the past (Table 4). However, there were a few points of interest. Thirty percent of Black respondents reported not knowing what activities might occur compared with 9% of White respondents that were unsure (figure 7) ($p = 0.002$). Compared with the 52% of Black respondents who took no action on their woodlands in the last 5 years, only 18% of respondents thought there would be no action. Four percent of Black respondents expected to construct trails on their forestlands, whereas 27% of White respondents anticipated engaging in this activity ($p = 0.0197$). Again, improving wildlife habitat was significantly different ($p < 0.001$), with none of the Black respondents thinking this would happen in the next 5 years compared with 41% of White respondents.

Respondents were asked to rate their level of concern on various topics for their forestland (Table 5). Black respondents reported misuse of land, high property tax, and trespassing among their top concerns. There was overlap in two of the top concerns of White respondents; they reported being concerned about trespassing and high property tax but were also concerned about keeping land intact for future generations. Damage to lands from invasive plants or insects ranked higher for White respondents, whereas Black FFOs were more concerned with environmental issues, such as climate change

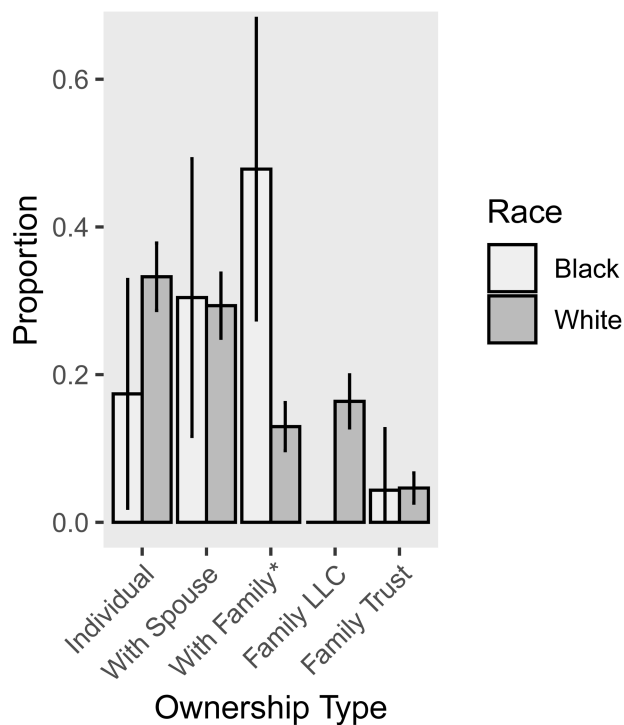


Figure 2. Proportion of FFOs in six selected counties in the southeastern United States in 2018 by ownership type and race. Error bars represent 95% confidence intervals. * indicates a significant difference, $p < 0.05$.

and air pollution (figure 8), but only removal of invasive plants and unwanted insects exhibited a significant difference.

The FFOs were asked how familiar they were with various landowner assistance programs and if they were enrolled. Black respondents were not as familiar with these programs as their White counterparts and there were significant differences in terms of enrollment in tax deferment and cost share programs (figure 9). Regarding whether respondents participated in these programs, in every instance, Black FFO participation was lower than White and there were significant differences for participation in the tax and cost-share programs (figure 10).

Furthermore, none of the Black respondents had a management plan compared with 28% of the White respondents ($p = 0.0093$). Twenty-two percent of Black respondents reported not knowing if their wooded land had a management plan compared with 3% of White respondents (figure 11).

Discussion

This study was designed to test whether response rates by Black FFOs can be increased using outreach efforts and to examine the responses of the target population. A number of interesting findings were accrued here but there were also a few shortcomings. We were able to increase response rate four percentage points from the 2018 NWOS, 5% vs. 1%. Even with this increase, the number of respondents who are Black is low, even in the treatment counties where outreach efforts were focused on this group. Initial results suggest owners who are Black are a relatively small percentage of current FFOs. This finding is corroborated by statistics from the USDA National Agricultural Statistics Service in terms of

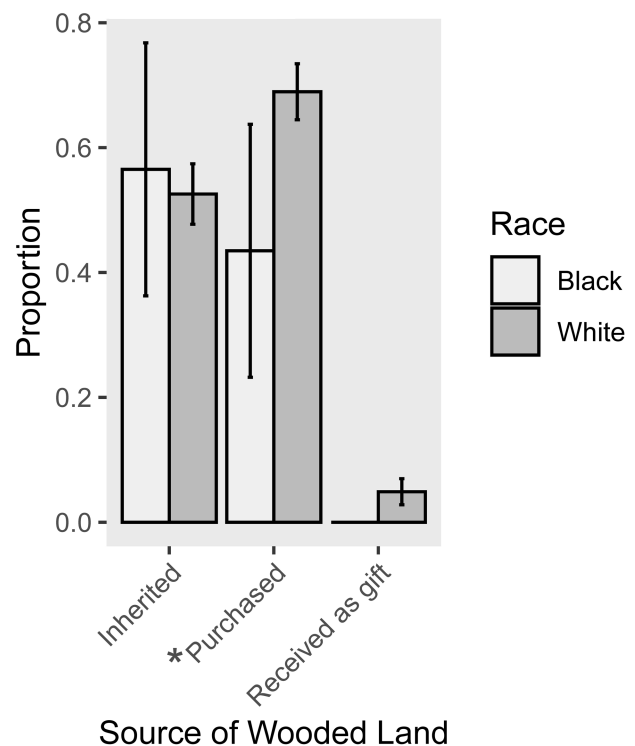


Figure 3. Proportion of FFOs in six selected counties in the southeastern United States in 2018 summarized by how the respondent acquired their wooded land and race. Error bars represent 95% confidence interval. * Indicates significant difference, $p \leq 0.05$.

farmers and farm owners who are Black (Butler et al. 2020; Christian et al. 2013; Touzeau 2019), but there are possibilities that these studies suffer from nonresponse biases.

Despite the outreach efforts to increase the number of responses from Black FFOs, we saw no significant differences for Black FFOs who received the outreach treatment and those that did not. It is possible that this is not a failure of the outreach efforts but that there are simply a lower number of Black FFOs, and our random-sampling design accurately captured this population. There is also the possibility that the impacts of Hurricane Florence had an effect on responses. The initial send out of the survey was delayed by a week with hopes of avoiding any potential impacts. North Carolina was the most heavily affected state, with Sampson County being designated as in need of special assistance by FEMA. There was no significant difference in cooperation for this county (Table 1). Other survey-related projects have reported low response rates from Black FFOs; DoGoyke et al. (2019) report a 16% response rate from a survey of African American FFOs. Krysan et al. (1994) documented a lower response rate of Black respondents for their mail survey. Social science has long intimated that groups that hold less power in society or minorities are hesitant to participate in surveys because they feel that providing any more information may be detrimental to themselves and those like them (Goyder 1987; Groves 1989). In addition, the continuing legacy of discrimination against Black people in the United States may contribute to low response rates among this population.

The low number of self-identified Black FFOs may be a result of item nonresponse rather than sample design or low numbers of this group. For item nonresponse in this project, twenty-four respondents declined to answer the question

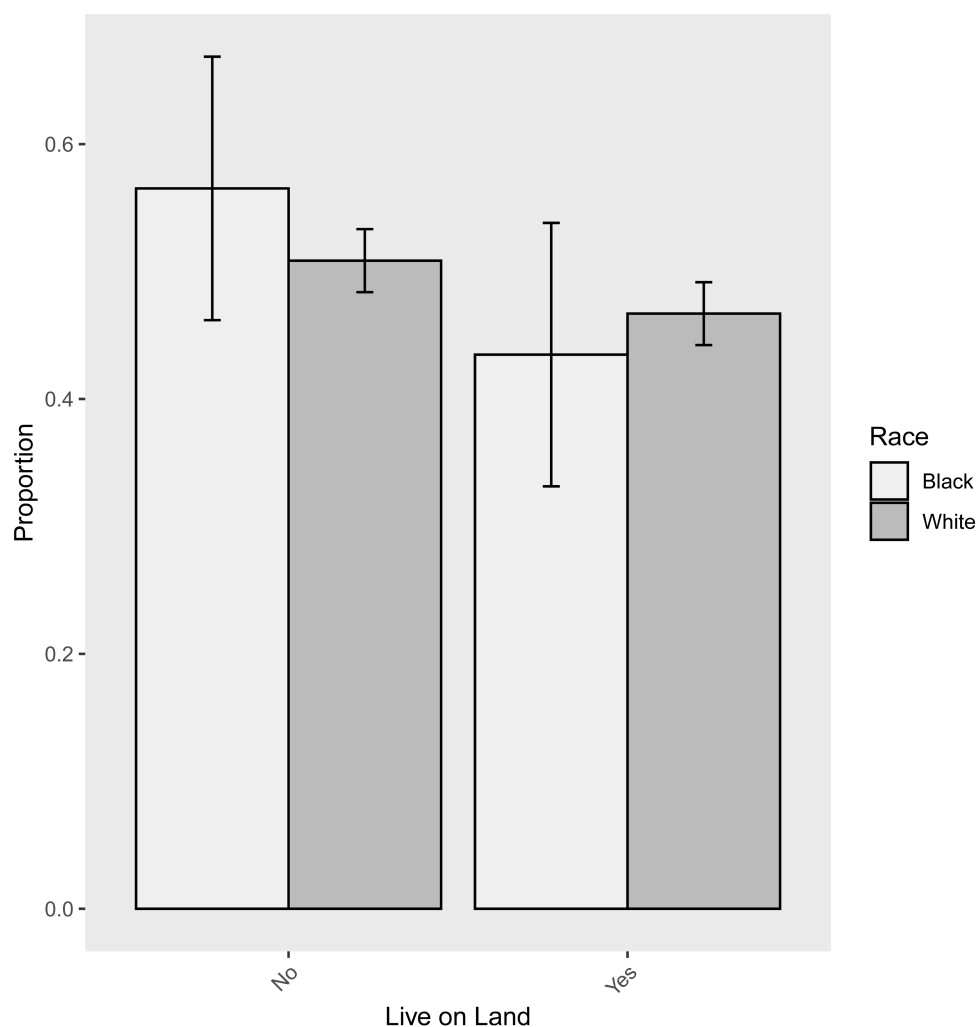


Figure 4. Proportion of FFOs in six selected counties in the southeastern United States in 2018 by absentee status and race. Errors bars represent 95% confidence interval.

Table 2. Proportion of FFOs in six selected counties in the southeastern United States in 2018 by ownership objectives. Data are grouped by race and by respondents who selected 'Very important' or 'Important.' Indicates significant difference, * $p < 0.05$.

	Black	White
Beauty*	0.30	0.68
Pass on to heirs	0.78	0.73
To raise family	0.35	0.38
Firewood*	0.13	0.06
Hunting*	0.30	0.55
Land investment	0.70	0.66
Nature*	0.26	0.63
Non-timber forest products*	0.00	0.05
Privacy*	0.35	0.59
Recreation*	0.13	0.42
Timber products	0.48	0.55
Protect water*	0.30	0.55
Wildlife habitat*	0.30	0.73

about race. It is possible that this group is largely Black FFOs who do not feel comfortable answering the question for a variety of reasons (Bownes and Zabawa 2019; Dwivedi et al. 2016; Gordon et al. 2013; Hitchner et al. 2017), but it is also possible the respondents were not Black and declined to respond for reasons unknown. It is also possible that our low response rate of Black FFOs is a function of the nature of how forestland is owned by this group. In our study, almost 50% of Black respondents reported owning with people other than spouse. This may contribute to low response rates because the addressee may not be familiar with the land or may feel they are unable to answer accurately for their extended ownership/family group (Goyke et al. 2019; Hilliard-Clark and Chesney 1985).

To combat this low response rate, other sampling methods may be necessary. A purposive sample, where potential respondents are chosen based on participation in groups with certain characteristics (e.g., The Roanoke Electric Cooperative Sustainable Forestry and Land Retention Project, Limited Resource Landowner Education and Assistance Network, among others), could be used. This approach would certainly attract the specific group of interest but would no longer be a random sample that could be extrapolated to the whole population. Tax rolls, in conjunction with digital property data

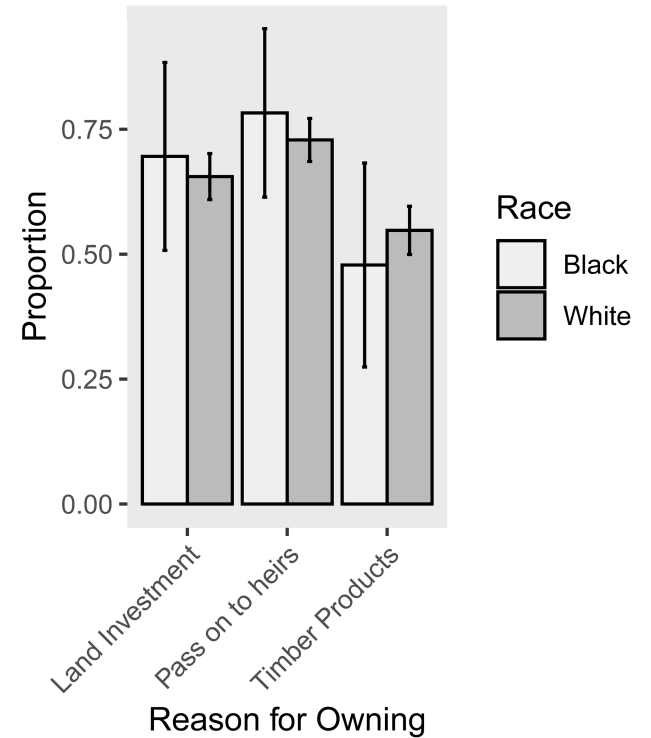


Figure 5. Proportion of FFOs in six selected counties in the southeastern United States in 2018 by ownership objectives. Data are grouped by race and by respondents who selected ‘Very important’ or ‘Important’. Error bars represent 95% confidence interval.

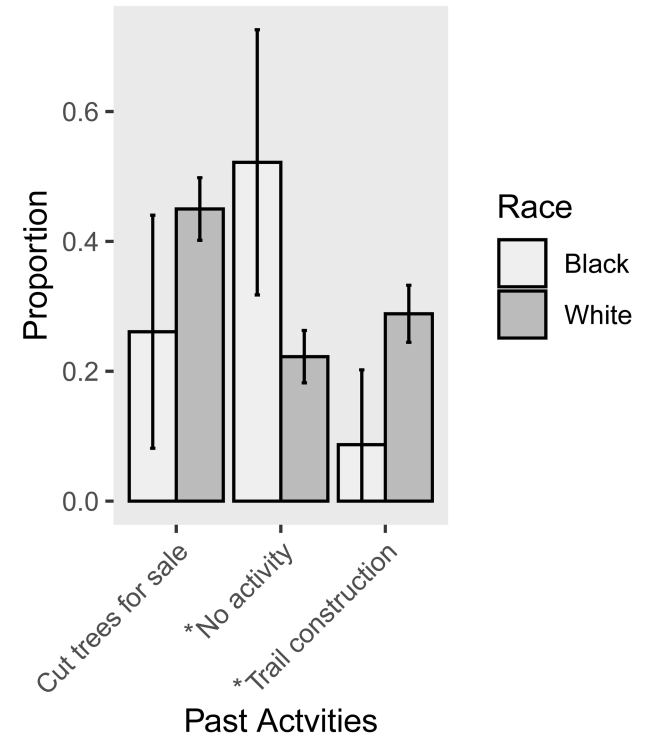


Figure 6. Proportion of FFOs by race in six selected counties in the southeastern United States in 2018 for activities that occurred on their wooded land in the last 5 years. Error bars represent 95% confidence intervals. * Indicates significant difference, $p \leq 0.05$.

Table 3. Proportion of FFOs by race in six selected counties in the southeastern United States in 2018 for activities that have occurred on their wooded land in the last 5 years. * Indicates significant difference, $p < 0.05$.

	Black	White
Cut trees for sale	0.26	0.45
Controlled burn	0.04	0.22
Cut trees for personal use	0.00	0.15
Livestock grazing	0.00	0.05
Removed unwanted insects*	0.00	0.08
No activity*	0.52	0.22
Removed invasive plants	0.00	0.21
Collect NTFP	0.00	0.11
Reduced fire hazard	0.04	0.16
Road construction*	0.04	0.23
Trail construction*	0.09	0.29
Improved wildlife habitat*	0.04	0.39

Table 4. Proportion of FFOs by race in six selected counties in the southeastern United States in 2018 for activities that may occur on their wooded land in the next 5 years. * Indicate significant difference, $p < 0.05$.

	Black	White
Collect NTFP	0.04	0.11
Controlled burn*	0.04	0.25
Cut trees for personal use	0.00	0.13
Cut trees for sale	0.26	0.45
I don’t know*	0.30	0.09
Improve wildlife habitat*	0.00	0.41
Livestock grazing	0.00	0.05
No activity	0.18	0.13
Reduce fire hazard	0.04	0.17
Remove invasive plants	0.09	0.23
Remove unwanted insects	0.00	0.10
Road construction*	0.00	0.25
Trail construction*	0.04	0.27

from computer assisted mass appraisal methods, could be used to gain knowledge of which parcels are likely owned by African or Black Americans (Jones and Pippin 2019). Groups that already have a solid Black population among them, such as the Sustainable Forestry and African American Land Retention Network, could be asked to generate mailing lists or interview participants, but it is important that there are shared objectives and appropriate privacy assurances are in place; using participatory action research or similar approaches may be ways to help ensure these issues are addressed (Vaughn

and Jacquez 2020). Although the probability-based sampling used in this study allows for computation of population-level estimates, the approach can be problematic for detecting sub-populations that are relatively rare, hard to detect, or both. Future efforts could potentially use a hybrid approach that is somewhere between the probability-based quantitative methods used here and the qualitative methods that have been used for many previous studies. For example, snowball sampling could be used to try to fully enumerate FFOs who are

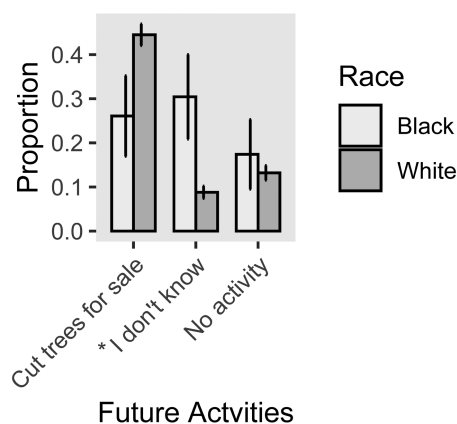


Figure 7. Proportion of FFOs by race in six selected counties in the southeastern United States in 2018 for activities that might occur on their wooded land in the next 5 years. Error bars represent 95% confidence interval. * Indicates significant difference, $p \leq 0.05$.

Black within specific areas. Questions designed specifically for this population and how they use their land could also be added to the survey instrument. Black landowners may view and use their woodlands differently than the majority of FFOs and have a culture of land use that may not be represented (Purifoy 2022).

Regardless of the percentage of FFOs who are Black, there are differences from FFOs who are White that have important policy implications. Ownership structure, how lands were acquired, traditional management activities, and low knowledge of or engagement in assistance programs suggest that there are substantive differences. As the majority of FFOs are White, current policies and programs for landowners may not be meeting the needs of Black FFOs (Goyke et al. 2019; Schelhas et al. 2012) that were designed with the majority in mind. Additionally, the findings of absentee ownership and low response rate of Black respondents may also indicate there may be an heirs' property component.

Fifty percent of Black FFOs in this study own their land with family members other than spouse compared with 13% of White respondents. This is a common pattern for lands that are held as heirs' property; titles fractionated over time as owners die without a will and the land becomes owned by all the descendants as tenancy in common (Bailey et al. 2019; Dyer et al. 2009; Gordon et al. 2013). In further support of this, 57% of the Black respondents acquired their land through inheritance; again, a higher percentage than White owners. Future survey projects could include questions about title, ownership groups, and more focused questions on how forestland was obtained while providing the utmost assurances that these data are kept completely confidential. However, we are unable to say with certainty whether or not the lands are held in clear title in this study and specific questions on this topic could be added to future iterations of the NWOS and other landowner surveys.

It has been documented that owners with heirs' properties have lower engagement with their land, ranging from absentee ownership to low forest management (Bailey et al. 2019; Gan et al. 2003; Goyke et al. 2019; Schelhas et al. 2017a). Our data also show a similar trend, where 52% of the Black respondents report "no activity" as their primary action on their land compared with 22% for White respondents. In

Table 5. Proportion of FFOs by race in six selected counties in the southeastern United States in 2018 for concerns for their wooded land. * Indicates significant difference, $p < 0.05$.

	Black	White
Air pollution	0.52	0.38
Climate change	0.52	0.33
Damage from animals	0.22	0.25
Development	0.30	0.36
Drought	0.35	0.40
Government regulations	0.57	0.61
High taxes	0.74	0.72
Invasive plants*	0.17	0.44
Keeping land intact	0.70	0.74
Misuse of wooded land	0.83	0.69
Off-road vehicles	0.22	0.24
Storms	0.43	0.54
Trespassing	0.74	0.74
Unwanted insects*	0.43	0.61
Water pollution	0.48	0.43
Wildfire	0.61	0.61

addition, only 26% of Black respondents reported harvesting timber for sale and less than 10% reduced fire risk, had controlled burns, improved wildlife habitat, or did trail or road construction. The other five categories queried had no participation at all. Thirty percent of Black FFOs indicate they are uncertain of any management activities that would occur on their lands in the next 5 years. The pattern of lower engagement for Black FFOs in this study may again indicate the presence of heirs' properties. However, it may be that the questions we ask on the NWOS about land management activities do not encapsulate the full scope of how Black forestland owners use and view their land. A qualitative compendium of African American interviews indicates that although this group shows a decreased level of traditional engagement on their woodlands, they still hold great value in many of the traditional uses of woodlands, such as hunting, farming, and gathering of non-timber forest products (Schelhas et al. 2017b).

When asked about landowner assistance programs, the majority of Black FFOs respond that they are not enrolled nor do they self-identify as familiar with the programs. This is in line with the findings of other studies on this topic—Black FFOs have low levels of accessing assistance programs across the Southern United States (Dwivedi et al. 2016; Gan et al. 2005; Hilliard-Clark and Chesney 1985; Schelhas et al. 2021). There may be other reasons for this lack of program participation by Black FFOs. First, knowledge of programs is not reaching this portion of the FFO population. Dwivedi et al. (2016) analysis of state and federal government programs showed that Black FFOs reported inadequate outreach as an impediment to program access. Having a management plan and receiving technical assistance has been noted to be an indicator of whether a landowner is likely to participate in an assistance program (Kilgore et al. 2015). In our study, none of the Black respondents have a management plan and only one respondent received advice about their forestland. Second, heirs' property and unclear title may be preventing

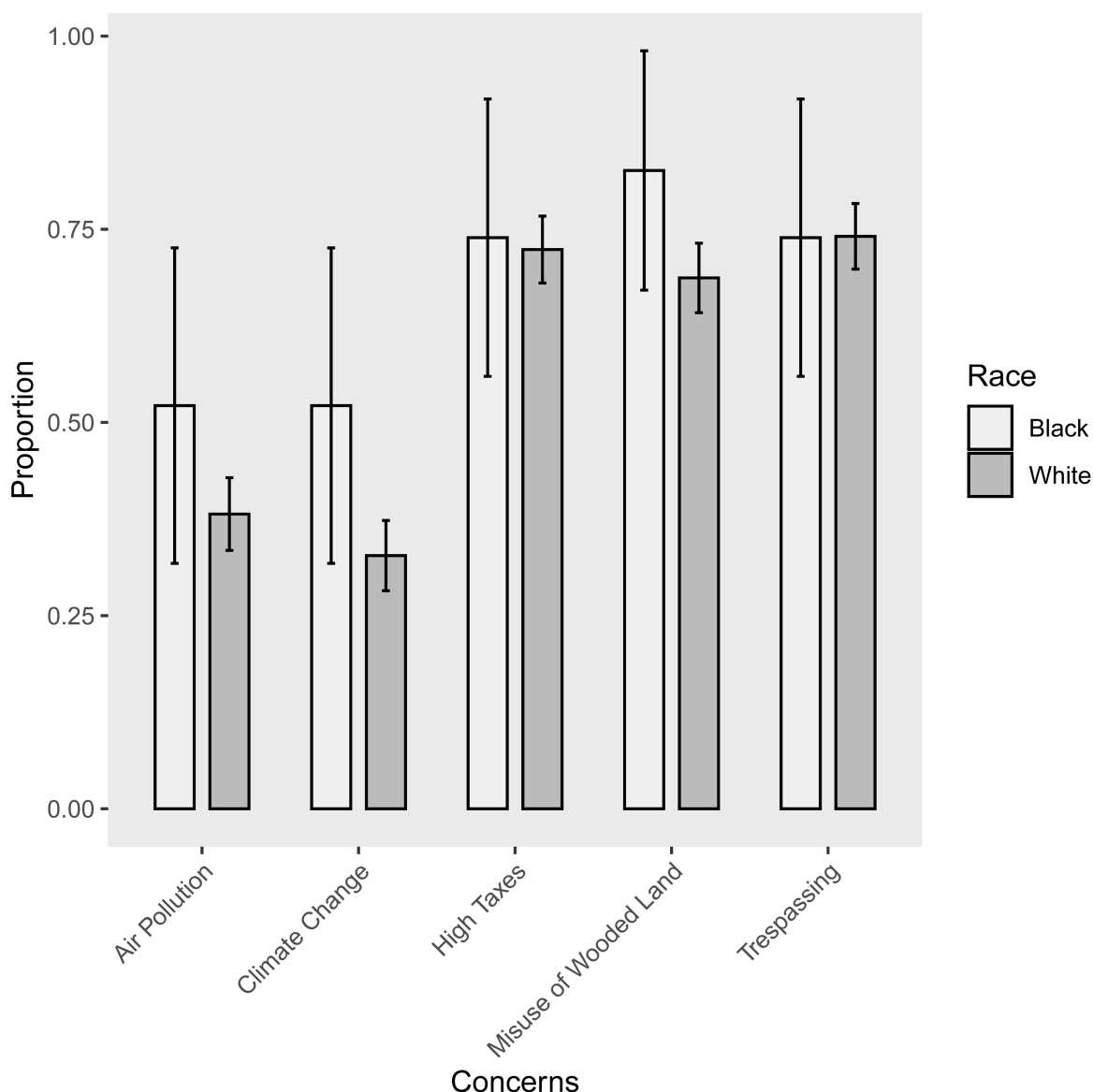


Figure 8. Proportion of FFOs by race in six selected counties in the southeastern United States in 2018 for concerns for their wooded land. Data are grouped by race and by respondents who selected 'Great concern' or 'Concern.' Error bars represent 95% confidence interval.

respondents from enrolling in assistance programs. When land is owned in common by many heirs, it is often difficult to reach consensus for management decisions (Dyer and Bailey 2008; Gan et al. 2005). It has been estimated that 36% of Black-owned forestland in the Southern United States is held as heirs' property (Bailey et al. 2019) and may be a contributing factor in lack of engagement in these programs. Finally, overall distrust of the government and its agents and programs may be keeping Black FFOs from using landowner assistance programs (Hitchner et al 2021; Schelhas & Hitchner 2020; Schelhas et al. 2017a; Zabawa et al. 1990). The USDA, in particular, has a history of discrimination against Black farmers. Mishandling of loan applications, denial of loans, and lack of assistance from this agency is well documented (Hinson and Robinson 2008).

The differences and similarities between FFOs who are Black and those who are White have important implications

for how landowner assistance and other programs are designed and implemented. It is important to understand the needs, opportunities, and constraints of Black FFOs, and whenever feasible, include individuals who are from those populations from the ground up—in the design, implementation, and monitoring efforts.

Conclusions

Although there are a number of unique findings in this study, there are a few ways future efforts could fill in some of the missing pieces we found here. Using purposive sampling where the sample is not random and the mailing list is generated from a database where race is noted would allow us to more fully survey Black FFOs. It would also be advantageous to augment the survey instrument to include questions about title, ownership structure, reticence for or

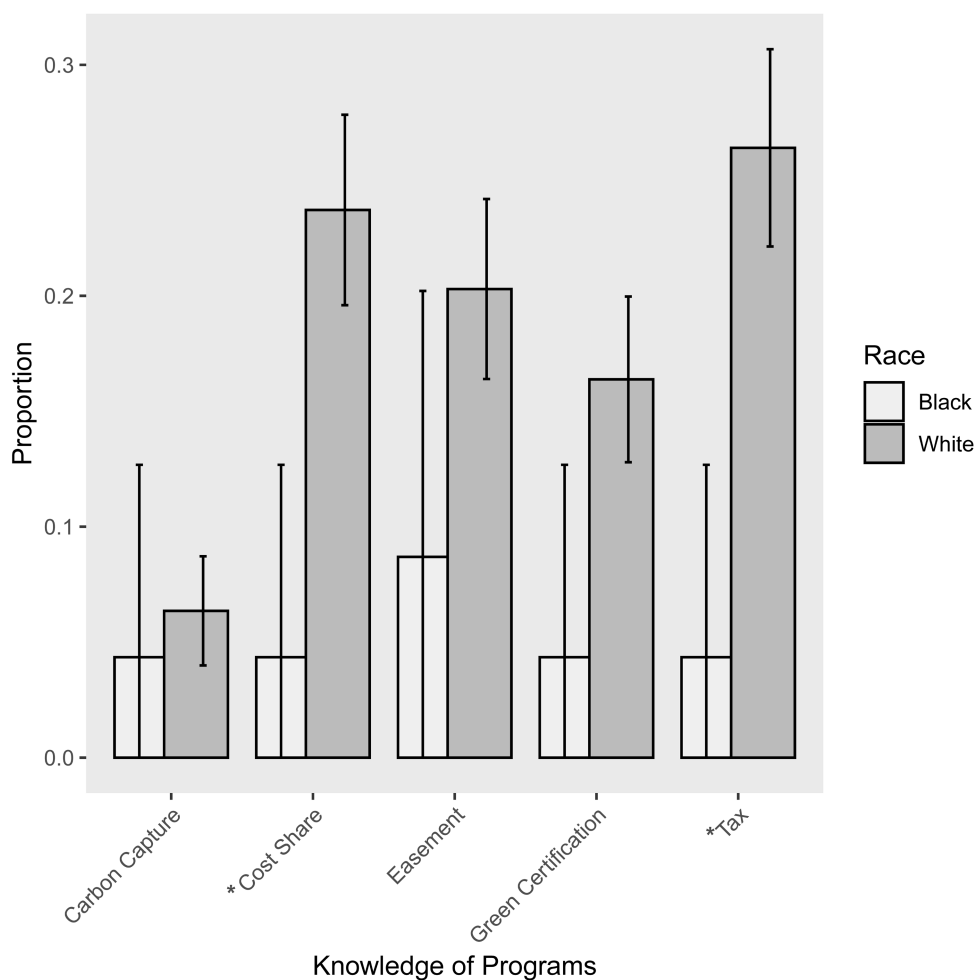


Figure 9. Proportion of FFOs by race in six selected counties in the southeastern United States in 2018 for participation in landowner assistance programs. Error bars represent 95% confidence intervals. * Indicates a significant relationship, $p \leq 0.05$.

unawareness of landowner assistance programs, and other topics that may be of more relevance to traditionally underserved populations. In October 2022, the USDA announced several programs focusing on providing access to federal programs and services for underserved populations such as underrepresented FFOs. These programs could be partnered with in a number of ways to obtain a sample population. Groups such as the NWOS may also want to partner with historically Black universities or groups, such as the Limited Resource Landowner Education and Assistance Network and the Sustainable Forestry and Land Retention Project, to begin building a relationship with Black landowners and learning together through these respective networks. This partnership would rely on the shared values of all parties involved to make sure participants were comfortable with data collected and assure privacy. Furthermore, holding a workshop or meeting of Black landowners could produce mutual benefits where we could explain our goals and why participation in the survey could be beneficial and allow Black FFOs to share with us their goals and perspectives. This type of meeting would further cement our budding relationship while increasing response rate as well as provide an accurate representation of Black FFOs nationally. In addition to considering whether race was a factor that was driving low response rates,

examining how race is a factor that influences response as well as all actions on the land would likely provide insight as well. This may provide answers to many of the questions that were raised by the analysis in this project. Exploring how to best capture the attitudes, intentions, and behaviors of Black FFOs can provide a greater understanding of how to help this population achieve management goals, create opportunities to turn land profitable, and give managers and policy makers the tools to assist them in their objectives.

Acknowledgments

We are greatly appreciative for the assistance in implementing the survey outreach that was provided by Jennie Stephens from the Center for Heirs' Property Preservation, Alton Perry from the Sustainable Forestry and Land Retention Project, and Jerry Lacey from the Limited Resource Landowner Education and Assistance Network.

Funding

Funding for this project was provided from a grant from the USDA Forest Service, Northern Research Station to the University of Massachusetts Amherst (16-JV-11242305-041).

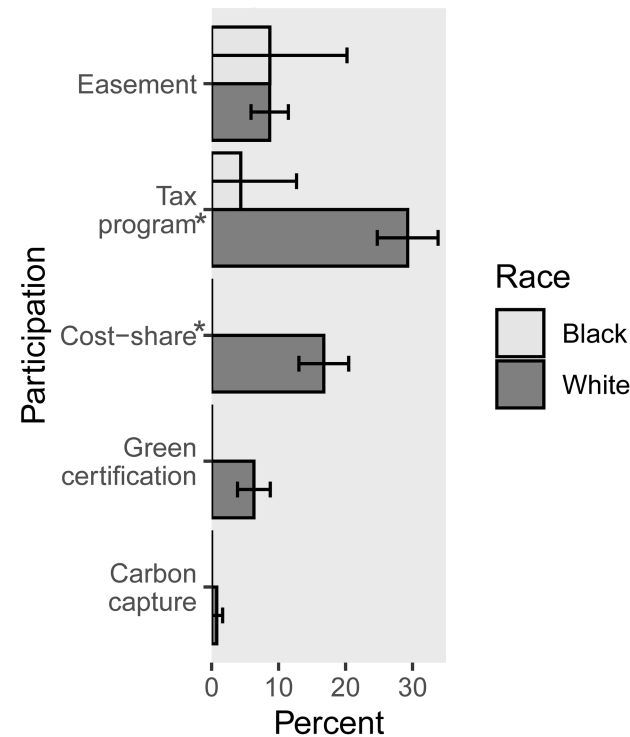


Figure 10. Proportion of FFOs by race in six selected counties in the southeastern United States in 2018 for knowledge of common landowner assistance programs. Error bars represent 95% confidence intervals. * Indicates a significant difference $p \leq 0.05$.

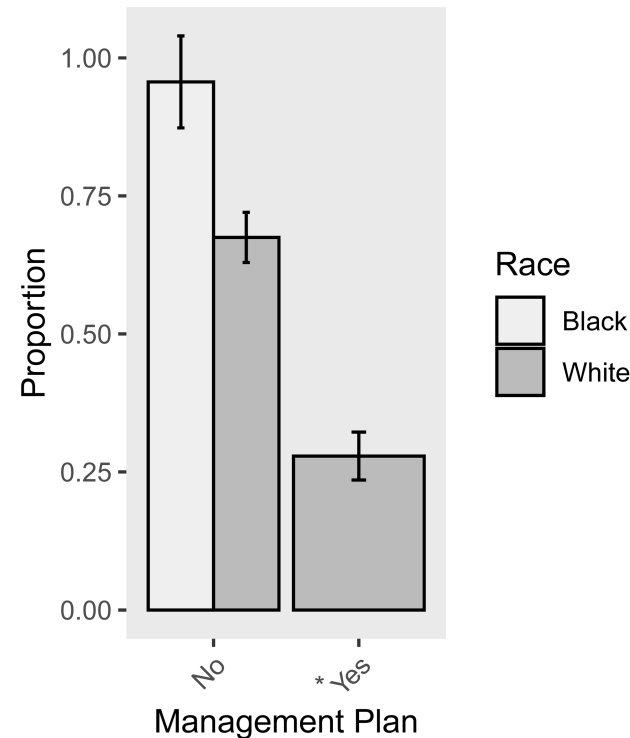


Figure 11. Proportion of FFOs by race in six selected counties in the southeastern United States in 2018 by whether or not they have a management plan. Error bars represent 95% confidence intervals. * Indicates a significant difference $p \leq 0.05$.

Contribution Statement

AR*: data curation, formal analysis, writing—original draft, review and editing; CJG: conceptualization, writing—review and editing; JS: conceptualization, writing—review and editing; BJB: conceptualization, methodology, writing—review and editing.

Literature Cited

Baab, C.H. 2011. "Heir Property: A Constraint to Planners, an Opportunity for Planners." *Planning and Environmental Law* 63 (11): 3–11.

Bailey, C., B. Barlow, and J. Dyer. 2019. "Practical Constraints to Timber Management among African American Owners of Heir Property." *Landscape and Urban Planning* 188 (2019): 180–187.

Bownes, T. and R. Zabawa. 2019. "The Impact of Heirs' Property at the Community Level: The Case Study of the Prairie Farms Resettlement Community in Macon County, AL". In *Heirs' Property and Land Fractionation: Fostering Stable Ownership to Prevent Land Loss and Abandonment*, edited by Gaither, C.J., A. Carpenter, T.L. McCurdy, and S. Toering, 29–43. E-General Technical Report SRS-244. Asheville, NC: USDA Forest Service, Southern Research Station.

Butler, B.J., J. Caputo, A.L. Robillard, E.M. Sass, and C. Sutherland. 2021a. "One Size Does Not Fit All: Relationships between Size of Family Forest Holdings and Owner Attitudes and Behaviors." *Journal of Forestry* 119 (1): 28–44.

Butler, B.J., S.M. Butler, J. Caputo, J. Dias, A. Robillard, E.M. Sass. 2021b. *Family Forest Ownerships of the United States, 2018: Results from the USDA Forest Service, National Woodland Owner Survey*. USDA General Technical Report NRS-199. Madison, WI: USDA Forest Service, Northern Research Station.

Butler B.J. and J. Caputo. 2021. *Weighting for the U.S. Forest Service, National Woodland Owner Survey*. USDA Forest Service General Technical Report NRS-198. Madison, WI: Northeastern Research Station.

Butler, S.M., J. Schelhas, and B.J. Butler. 2020. "Minority Family Forest Owners in the United States." *Journal of Forestry* 118 (1): 70–85.

Christian, C.S., R.F. Faser, B. Gyawali, and C. Scott. 2013. "Participation of Minorities in Cost-share Programs – The Experience of a Small Underserved Landowners' Group in Alabama." *Journal of Sustainable Development* 6 (4): 70–85.

Dillman, D.A., J.D. Smyth, L.M. Christian. 2014. *Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method*, fourth edition. New York, NY: John Wiley & Sons.

Dwivedi, P., A. Jagadish, and J. Schelhas. 2016. "Perceptions of Stakeholder Groups about the Participation of African American Family Landowners in Federal Landowner Assistance Programs." *Journal of Forestry* 114 (2): 89–96.

Dyer, J.F., and C. Bailey. 2008. "A Place to Call Home: Cultural Understandings of Heir Property among rural African Americans." *Rural Sociology* 73 (3): 317–338.

Dyer, J.F., C. Bailey, and N.V. Tran. 2009. "Ownership Characteristics of Heir Property in a Black Belt County: A Quantitative Approach." *Journal of Rural Social Sciences* 24 (2): 192–217.

Gaither, C.J., A. Carpenter, T.L. McCurdy, S. Toering. 2019. *Heirs' Property and Land Fractionation: Forestering Stable Ownership to Prevent Land Loss and Abandonment*. E-General Technical Report SRS-244. Asheville, NC: USDA Forest Service Southern Research Station.

Gan, J., S.H. Kolison Jr, and N.O. Tackie. 2003. "African-American Forestland Owners in Alabama's Black Belt." *Journal of Forestry* 101 (3): 38–43.

Gan, J., and S.H. Kolison Jr. 1999. "Minority Forest Landowners in Southeastern Alabama." *Southern Journal of Applied Forestry* 23 (3): 175–178.

Gan, J., O.O. Onianwa, J. Schelhas, G.C. Wheelock, and M.R. Du-bois. 2005. "Does Race Matter in Landowners' Participation in

- Conservation incentive Programs?" *Society and Natural Resources* 18 (5): 431–445.
- Gilbert, J., G. Sharp, and M.S. Felin. 2002a. "The Loss and Persistence of Black-Owned Farms and Farmland: A Review of the Research Literature and its Implications." *Journal of Rural Social Sciences* 18 (2): 1–30.
- Gilbert, J., S.D. Wood, and G. Sharp. 2002b. "Who Owns the Land? Agricultural Land Ownership by Race/Ethnicity." *ERS Agricultural Economic Report* 17 (4): 55–62. Washington, DC: USDA Economic Research Service.
- Gordon, J.S., A. Barton, and K. Adams. 2013. "An Exploration of African American Forest Landowners in Mississippi." *Rural Sociology* 78 (4): 473–497.
- Goyder, J. 1987. *The Silent Minority: Nonrespondents on Sample Surveys*. Boulder, CO: Westview Press.
- Goyke, N., and P. Dwivedi. 2021. "Ascertaining Differences between Farmer and Non-Farmer African American Forest Landowners in Georgia, United States." *Trees, Forests and People* 5 (5): 100118–100116.
- Goyke, N., P. Dwivedi, and M. Thomas. 2019. "Do Ownership Structures Effect Forest Management? An Analysis of African American Family Forest Landowners." *Forest Policy and Economics* 106 (1): 1–11.
- Groves, R.M. 1989. *Survey Errors and Survey Costs*. New York, NY: John Wiley & Sons.
- Haines, T. 1995. *Federal and State Forestry Cost-Share Programs: Structure, Accomplishments, and Future Outlook*. Research Paper SO-295. New Orleans, LA: USDA Forest Service, Southern Forest Experimental Station.
- Hilliard-Clark, J., and C.E. Chesney. 1985. "Black Woodland Owners: A Profile." *Journal of Forestry* 83 (11): 674–679.
- Hinson, W.R., and E. Robinson. 2008. "We Didn't Get Nothing: The Plight of the Black Farmers." *Journal of African American Studies* 12 (May): 283–302.
- Hitchner, S., J. Schelhas, and P. Dwivedi. 2021. "Safe Havens: The Intersection of Family, Religion, and Community in Black Cultural Landscapes of the Southeastern United States." *Landscape and Urban Planning* 214 (October): 104136.
- Hitchner, S., J. Schelhas, and C.J. Gaither. 2017. "A Privilege and a Challenge: Valuation of Heirs' Property by African American Landowners and Implications for Forest Management in the Southeastern U.S." *Small-scale Forestry* 16 (3): 395–417.
- Jones, S. and J.S. Pippin. 2019. "Learning about the Land: What Can Tax Appraisal Data Tell Us about Heirs' Property?" In *Heirs' Property and Land Fractionation: Fostering Stable Ownership to Prevent Land Loss and Abandonment*, edited by Gaither, C.J., A. Carpenter, T.L. McCarty, and S. Toering. 13–18. E-General Technical Report SRS-244. Asheville, NC: USDA Forest Service, Southern Research Station.
- Kilgore, M.A., S.A. Snyder, D. Eryilmaz, M.A. Markowski-Lindsay, B.J. Butler, D.B. Kittredge, P.F. Catanzaro, et al. 2015. "Assessing the Relationship between Different Forms of Landowner Assistance and Family Forest Owner Behaviors and Intentions." *Journal of Forestry* 113 (1): 12–19.
- Krysan, M., H. Schuman, L.J. Scott, and P. Beatty. 1994. "Response Rates and Response Content in Mail Versus Face-to-Face Surveys." *Public Opinion Quarterly* 58 (3): 381–399.
- Lor, M., B.J. Bowers, A. Krupp, and N. Jacobson. 2017. "Tailored Explanation: A Strategy to Minimize Nonresponse in Demographic Items among Low-Income and Racial and Ethnic Minorities." *Survey Practice* 10 (3): 1–11.
- Ma, Z., B.J. Butler, D.B. Kittredge, and P. Catanzaro. 2012. "Factors Associated with Landowner Involvement in Forest Conservation Programs in the U.S.: Implications for Policy Design and Outreach." *Land Use Policy* 29 (1): 53–61.
- McGee, L. and R. Boone, eds. 1979. *The Black Rural Landowner: Endangered Species, Social, Political, and Economic Implications*. Westport, CT: Greenwood Press.
- Purifoy, D. 2022. "Remote-Control Plantations and Black Forest Relations in the Black Belt." *ARES* 13 (1): 140–155.
- R Core Team. 2022. *R: A Language and Environment for Statistical Computing*. Vienna: R Foundation for Statistical Computing. www.R-project.org.
- Schelhas, J. 2002. "Race, Ethnicity, and Natural Resources in the United States: A Review." *Natural Resources Journal* 42 (4): 723–763.
- Schelhas, J., and S. Hitchner. 2020. "Integrating Research and Outreach for Environmental Justice: African American Land Ownership and Forestry." *Annals of Anthropological Practice* 44 (1): 47–64.
- Schelhas, J., S. Hitchner, P. Dwivedi, and M. Thomas. 2021. "Understanding Black Landowner's Engagement in Forestry in Georgia, United States: A Closer Look." *Forests Trees and Livelihoods* 30 (4): 242–257.
- Schelhas, J., S. Hitchner, C. Johnson Gaither, R. Fraser, V. Jennings, and A. Diop. 2017a. "Engaging African American Landowners in Sustainable Forest Management." *Journal of Forestry* 115 (1): 26–33.
- Schelhas, J., C. Johnson Gaither, and V. Jennings. 2017b. *Sunshine, Sweat, and Tears: African-American Ties to Land and Forests in the South. e-General Technical Report SRS-220*. Asheville, NC: USDA Forest Service Southern Research Station.
- Schelhas, J., Y. Zhang, R. Zabawa, and B. Zheng. 2012. "Exploring Family Forest Landowner Diversity: Place, Race, and Gender in Alabama, United States." *International Journal of Social Forestry* 5 (1): 1–21.
- Touzeau, L. 2019. "Being Stewards of Land is Our Legacy: Exploring the Lived Experiences of Young Black Farmers." *Journal of Agriculture, Food Systems, and Community Development* 8 (4): 1–16.
- US Census Bureau. 2020. "Decennial Census of Population and Housing by Decades." Last modified on December 3, 2021. https://www.census.gov/topics/population/race/data/tables.2020.List_523928342.html.
- USDA National Agricultural Statistics Service. 2017 *Census of Agriculture. Table 51*.
- Vaughn, L.M., and F. Jacquez. 2020. "Participatory Research Methods – Choice Points in the Research Process." *Journal of Participatory Research Methods* 1 (1): 13244. <https://doi.org/10.35844/001c.13244>.
- Zabawa, R., A. Siaway, and N. Baharanyi. 1990. "The Decline of Black Farmers and Strategies for Survival." *Journal of Rural Social Sciences* 7 (1): 9.