



Exploring Diversity in Forest Management Outlooks of African American Family Forest Landowners for Ensuring Sustainability of Forestry Resources in the Southern United States

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Abstract

African American forest landowners in the southern United States (US) are typically considered a homogenous group in current studies. Our research challenges this assumption by identifying four distinct forest management outlooks among African American forest landowners using Q Method. Sustainable Harvesters focus on balanced land use with a long-term outlook; Back 40ers appreciate the presence of forests on their property but focus on alternative land use; Land Use Pragmatists are also interested in alternative land use and primarily view forest as an economic resource; Recreationalists value their forestland not for economic value but as a place for personal use. Finally, Indecisive landowners are not sure about how to best manage their forestland. We argue that an understanding of different forest management outlooks will improve sustainable forest management by better targeting extension and outreach efforts for African American forest landowners.

Keywords African American · Forest management · Q Method · Rural extension and outreach · Southern United States

Introduction

Family forests comprise 42.7% of forestland in the United States (US) and 57.7% in the US South (Butler *et al.* 2016). The southern state of Georgia is the largest roundwood producing state in the US, and 54.0% (5.4 million hectares) of Georgia's forests are family forests, the second highest rate in the country (Butler *et al.* 2016). Family forests play a critical role in supporting the state's forestry sector, which in 2016 supported 144,537 jobs, provided \$8.5 billion in direct compensation, and contributed \$778 million in state tax revenue (Georgia Institute of Technology 2016). At the county level, 47 of 159 Georgia counties (30%) are moderate to critically

dependent on the forest sector, i.e., more than 5% of private sector wages are forest-related (Riall 2010). Considering the extent and economic impact of family forests their management is fundamental to a healthy forestry sector and strong rural communities in Georgia.

Compared to corporate and industrial owners' focused economic objectives and public forest objectives informed by the policy of multiple uses and stakeholder collaboration, family forest landowners have diverse objectives and motivations. The USDA Forest Service's National Woodland Owners Survey (NWOS) reports the following objectives as important or very important for family forest landowners in Georgia: legacy (84.9%), scenic beauty (81.1%), and protecting wildlife (80.0%) (Butler *et al.* 2016). The drawback to the NWOS and similar surveys is that generalization of landowners is useful as a baseline but not operationally. On the other hand, reporting the results of individual surveys is unhelpful for drawing any sort of useful conclusion. Faced with the dilemma of too much or too little generalization, some researchers have found a middle ground by grouping landowners based on demographics, landholding objectives, and management priorities (Blanco *et al.* 2015; Silver *et al.* 2015).

Often lost in the discussion of family forest management are marginalized forest landowners, especially minorities and women (Schelhas *et al.* 2003). In Georgia, about 3000 African American families own roughly 76,000 ha, constituting 2.9%

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of landowners and 1.7% of family forestlands (Butler *et al.* 2016). Research demonstrates that, like white forest landowners, African American forest landowners have diverse objectives but that these often differ from those of their white counterparts (Gan *et al.* 2003; Gan and Kolison 1999; Schelhas *et al.* 2012). For example, African Americans consider non-timber products and firewood more important, and scenic beauty less important, than do white forest landowners (Schelhas *et al.* 2012). In some ways, forest landownership has a higher value for rural African American communities than other rural communities since it constitutes a source of wealth and power in places they have been denied both (Bliss *et al.* 1998). Wealth and power, in turn, can grant forest landowners a sense of social independence, and it is unsurprising that African American landowners are an important part of civic life in rural communities and were among the first to join the Civil Rights Movement (Gilbert *et al.* 2002).

One key difference between African American and white forest landowners in the South is the prevalence of tenancy-in-common among African American landowners (Johnson-Gaither 2016). Tenancy-in-common, or heirs' property, is the result of real property left intestate upon the death of the landowner. All heirs of the original owner own a fractional interest in the entire property, including rights of exclusion. This situation sometimes referred to as the "tragedy of the anti-commons," adversely affects the ability to manage forests, discourages investment, and excludes heirs' property owners from leveraging their land as capital or enrolling the land in government programs (Deaton *et al.* 2009). At the same time, land in heirs' property sometimes strengthens the socio-cultural value of the land (Dyer and Bailey 2008; Merem 2006). Ethnographic work from Mississippi (Gordon *et al.* 2013), the Carolinas, and Alabama (Hitchner *et al.* 2017) repeatedly encountered the theme of forest landownership as a connection to the past. For some forest landowners, their family forest is a reminder of the historic struggle of African Americans dating back to the antebellum period, while for many their family forest serves as a direct link to ancestors who lived on the same land (Hitchner *et al.* 2017). Today, despite all of the drawbacks and complications of clouded titles and heirs' property issues, and the strong push to resolve them, many landowners still see family forest in heirs' property as a symbol of the contemporary struggle of African Americans for economic independence and a political voice (Reid and Bennett 2012), and even credit the status of heirs' property for saving their land from being sold by other family members (Dyer and Bailey 2008).

Important as family forestland is to African Americans and the communities they live in, the outlook for landowners is bleak. Nationally, land loss is of growing concern for all small landholders and is particularly acute for African Americans (Gilbert *et al.* 2002). Economics of scale, migration out of rural communities, and discrimination have all played a role

in African American land loss. Property in common is particularly vulnerable and is often lost due to delinquent tax payments or court-ordered sales (Mitchell 2014). Whatever the proximate cause, the ultimate contributor to land loss is that it is not sufficiently economically valuable to its owner (Merem 2006). One path to improving the economic value of family forestland is better management, in part contingent on professional advice targeted to the needs of individual forest landowners (Christian *et al.* 2013; Schelhas *et al.* 2018). Considering the importance of family forest landownership to rural African American communities, their diversity of management priorities, the historical, social, and cultural differences between the African American and white population, and the real danger that land loss presents to individual family forest landowners and their communities, the lack of research addressing the typologies of African American (or any minority) forest landowners is a serious gap in the literature. Using Q Method, we address this gap by exploring African American forest management priorities that will ultimately inform forest management professionals and help them craft strategies that align with the management objectives of the people they serve.

Q Method

Q method (Q) was developed to quantify subjective views that comprise a discourse (Stephenson 1953). Unlike R methodologies, which examine correlations between variables, Q examines correlations between subjects (Brown 1980), and the subject correlations are used to generate typologies that are exploratory and fixed spatiotemporally (McKeown and Thomas 1988). The typologies are not assumed to be an exhaustive list of all possible views in the discourse, and there is no claim that the distribution of subjects among the typologies is representative of the population at large. Rather than providing generalizations about a population, Q allows researchers to discover a starting place for understanding complicated issues (Brown 1980).

In practice, Q is an exercise in prioritizing and sorting statements that comprise a discourse which is usually accompanied by an interview. Its most important characteristic is that the sorting is self-referential, i.e., participants are free to define and prioritize statements based on their own subjective and lived experiences rather than on an objective standard. This has three benefits. First, by using a subjective point of reference, Q reduces the influence of researcher bias. Second, having each participant define the discourse in their own terms reduces the error that arises from disagreement over what different ranks mean. Third, because the method is self-referential (and exploratory) and statistical error is therefore not relevant, large sample size is unnecessary. In fact, too large a sample size can be counterproductive. According to Watts

and Stenner (2005), a large sample size “... can easily negate many of the subtle nuances, complexities, and hence many of the essential *qualities* contained in the data.”

Although statement sorting is self-referential, it is the responsibility of the researcher to select the statements that comprise the discourse (McKeown and Thomas 1988). The statements must represent the breadth and depth of the discourse. Brown (1980) clearly outlines the decisions the researcher must make when selecting statements. The first is whether to use naturalistic or standardized statements. Naturalistic statements are drawn from previous statements from participants themselves, media, or the literature. Standardized statements are those shared across a discipline. The second decision involves either a structured or unstructured sample. In a structured sample, the statements systematically cover the breadth and depth of the discourse, while an unstructured sample is comprised of the statements most commonly encountered without regard to a balance of themes. Finally, there is the question of forced normal sorting versus free sorting. In a forced normal distribution, participants are required to sort statements into a distribution roughly approximating a normal distribution, while in a free distribution participants are free to place their statements along the spectrum however they wish.

Since it has both a quantitative component (factor analysis) and qualitative component (qualitative interviews), Q is considered a mixed-method approach to forest landowner typology. Mixed-method studies represent 10% of all typology studies (Ficko *et al.* 2019), and Q studies represent an even smaller share. However, we believe that Q has much to offer that other methods do not. First, there is a risk in studies that use surveys and clustering, the most common methodology (87%) (Ficko *et al.* 2019), that participants will be clustered based on their characteristics and that researchers will make assumptions about their motivations. Q avoids this by combining factor analysis with qualitative interviews. Second, in their comparison of R and Q methodologies, Eyvindson *et al.* (2015) determined that both give comparable results with the important exception that Q highlights views outside the popular perspective. Using a method that highlights views outside the hegemonic view of family forest management is important (Takala *et al.* 2017), especially when working with a population that is already marginalized.

Materials and Methods

Study Area

Georgia is an ideal state for investigating African American attitudes toward forest management due to its large African American population and thriving forestry sector. As of the 2010 national census, Georgia ranked third among states in percent (30%) and first in total African American population

(2,910,673) (Winkler *et al.* 2013). As of 2013, Georgia ranked fourth in acreage under African American family forest landownership (76,486 ha), and fifth in the total number of African American family forest landowners (3000) (Butler *et al.* 2016). We specifically targeted southern Georgia, which we define as the area below the Fall Line running approximately from Augusta to Columbus by way of Macon (Fig. 1).

Q Statements

We chose to use naturalistic statements drawn from the literature on African American forest management (Gordon *et al.* 2013; Guffey *et al.* 2009; Hitchner *et al.* 2017; Schelhas *et al.* 2017a, b) and from ethnographic literature about rural African Americans (Dyer and Bailey 2008) on the principle that participants would respond more readily to statements reflecting their own words. Initially, we generated more statements than necessary and selected 20 for use in pile sorting. We elected to use a structured sample of statements to capture the entire discourse systematically, and we structured the statements around two objectives: non-timber and timber management. Each objective was broken into five themes: aesthetics, conservation, financial return, long-term investment, and management advice. For each objective/theme pairing, two statements were selected for the final set, one positive and one negative, for a total of 20 statements (Table 1). We edited the selected statements for clarity, and they were then reviewed by experts and field tested with three African American forest landowners in southern Georgia.

Participant Selection

Participant selection was purposive by necessity and design. There is no database of African American forest landowners in Georgia to serve as a sample frame. Additionally, Q works better with a diverse as opposed to a representative sample and by interested and enthusiastic participants. The participant selection was a collaborative process. The three forest landowners who agreed to help field test the statements were recruited as a part of the grant writing process for project funding. Together with contacts at the Fort Valley State University (FVSU) Cooperative Extension, they provided a list of additional potential participants who we contacted to explain the process and schedule a meeting. In addition to the contacts recommended by other participants and FVSU extension, landowners were approached at regular workshops sponsored by FVSU where we would explain the purpose of our research and ask for volunteers to participate. Oral consent was solicited from volunteers, and we were encouraged that many individuals declined to participate or dropped out part way through the process since this indicated that the consent process was well understood and that only individuals with a genuine interest in participating did so. At the workshops,

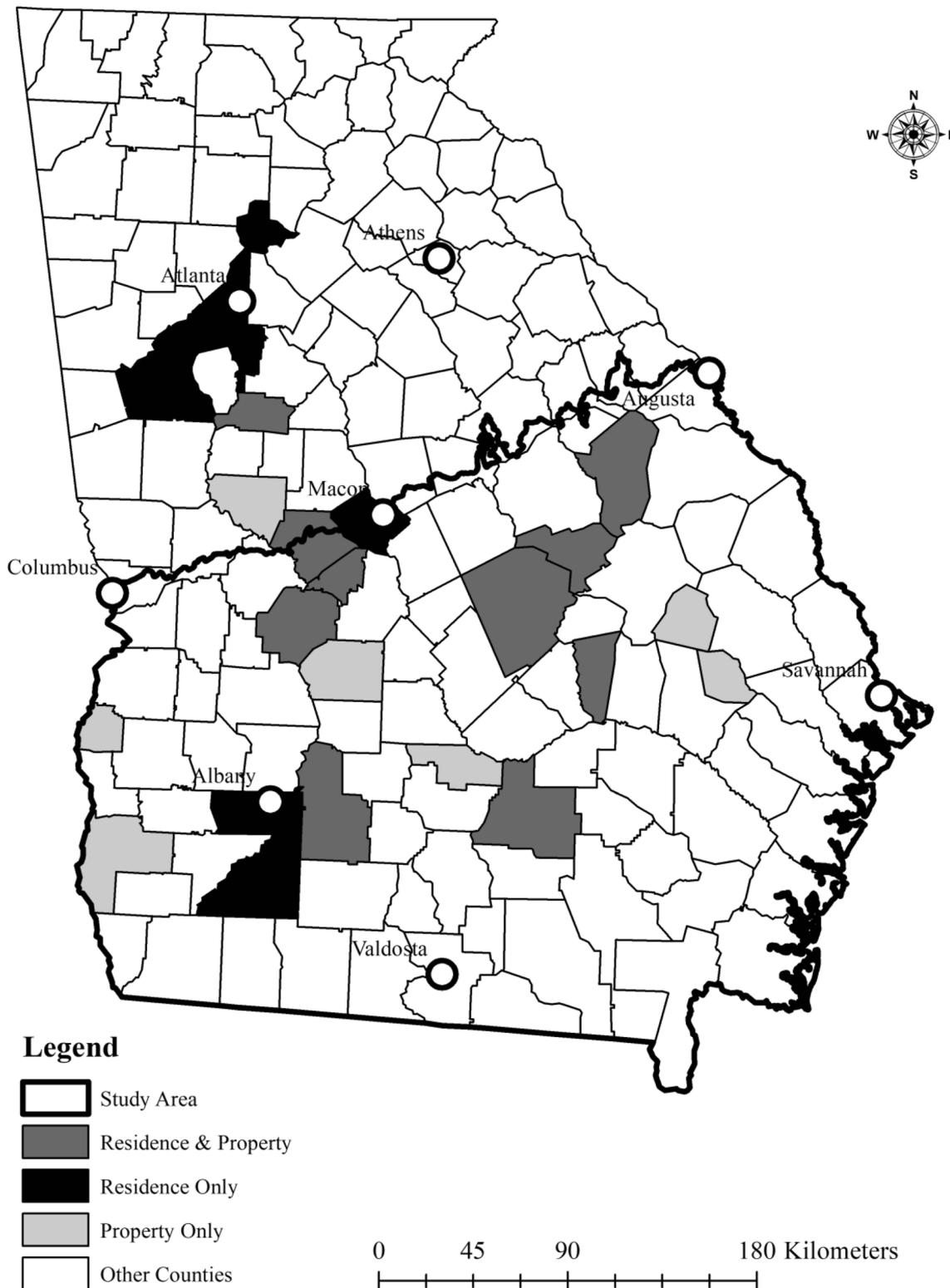


Fig. 1 The study area for this research is South Georgia. Shaded counties represent the residence and property of participants. The black counties are only home to absentee landowners, the light gray counties only

contain forestland owned in absentia, and the dark gray counties contain resident landowners and their forestland

some participants agreed to sit down with researchers for an interview, and some elected to participate simply in the pile

sorting and to leave their feedback on their statement record worksheet.

Table 1 Statements used for pile sorting

#	Statement	Objective	Theme	Positive/Negative
1	For me, harvesting timber is not really a viable income source	Timber	FR	Negative
2	The only advice anyone seems to want to give is how to profit from timber	Non-Timber	MA	Negative
3	I trust the timber management advice I get from others	Timber	MA	Positive
4	I worry that the timber harvesting advice isn't in my best interest	Timber	MA	Negative
5	Timber is too long-term an investment	Timber	LTI	Negative
6	Forestland ownership is more of a burden than a source of value	Non-Timber	LTI	Negative
7	Wildlife habitat is an important management priority	Non-Timber	C	Positive
8	Owing land is itself a form of economic security	Non-Timber	LTI	Positive
9	For me, harvesting timber can be an important source of income	Timber	FR	Positive
10	I don't harvest timber because I want to preserve nature	Timber	C	Negative
11	Managing my timber could be a great investment for the future	Timber	LTI	Positive
12	I'm not interested in harvesting timber, because it leaves an eyesore	Timber	A	Negative
13	Forest products like firewood, berries, and natural medicine aren't important in the twenty-first century	Non-Timber	A	Negative
14	I feel I get good feedback for all of my management ideas	Non-Timber	MA	Positive
15	Timber is not the only valuable resource on my property	Non-Timber	FR	Positive
16	You always have to choose between conservation and profits	Non-Timber	C	Negative
17	I enjoy a natural setting, with woods and animals	Non-Timber	A	Positive
18	A well-managed forest is a better place to live than one that runs wild	Timber	A	Positive
19	Timber can be harvested without unduly harming nature	Timber	C	Positive
20	Aside from timber, I don't see a lot of value in the land I own	Non-Timber	FR	Negative

As a structured sample, each statement was assigned a combination of an objective: Timber or Non-Timber and theme: Aesthetics (A), Conservation (C), Financial Return (FR), Long-term Investment (LTI), or Management Advice from forestry professionals (MA). For added robustness, each objective/theme combination was iterated twice, with the iteration worded to make either a Positive or Negative Statement. The statements were randomly rather than systematically numbered to avoid participants bias at the time of sorting

Pile Sorting

Participants began pile sorting by reading all 20 statements and sorting them into 'agree' and 'disagree.' They then prioritized both columns, with the result approximating a normal distribution. Throughout the process, participants were reminded that they were free to move statements between columns at any time and that the order of statements within the column did not matter. They were encouraged to provide a commentary on their placement process and highlight any statements they found difficult to sort. Six of the pile sorts were preceded by extended qualitative interviews conducted at the participant's home. The remaining 28 did not include extended interviews. Irrespective of setting, participants completed a short survey of demographic and landholding characteristics and were asked to record their thoughts on their statement record sheet.

Analysis

Q is essentially a factor analysis where the correlation matrix is based on a correlation between participants. Principal Component Analysis (PCA) resulted in seven components with an eigenvalue of at least 1.00, a common benchmark to

consider a factor for further analysis (McKeown and Thomas 1988). Ultimately, we selected four factors for interpretation. This decision was made to satisfy a second common criterion for choosing factors that at least two participants loaded significantly for the factor. We also chose four because they were intuitively interpretable and well justified by interview data. The four selected factors were rotated using varimax rotation. A cutoff of 0.43 was used in determining significant loading for a factor. Each participant was assigned to one factor, that for which they loaded most. Although uncommon, it is possible for a participant to be assigned a factor for which they have a negative loading. In this case, it is necessary to interpret the inverse composite sort during factor interpretation.

After factor analysis, Q uses weighted loadings to create composite sorts, which represent the prototypical sort for each factor. First, a factor score is assigned to each statement for each factor. The magnitude and sign of the factor scores indicate the relationship of the statements within each factor. For example, the statements with the two largest factor scores for a factor are assigned values of +3. Factor scores derive from merging the pile sorts of all participants who load significantly for a factor. Before merging, participants are weighted so that those with higher loading have a larger influence on the final factor score. The weight (w) of the factor loading (f) is first

calculated where the sum weighted reciprocal of the largest weight (w_L) is used to generate a z-score for each statement using the statement computation weight (T), average computation weight for all statement (\bar{X}_T), and variance of computational weight for all statements (S). The statement z-scores are subsequently arranged numerically to make the composite sort. All analysis was done using the PQMethod software available at <http://schmolck.org/qmethod/>.

Results

Landowner Profile

The 34 landowners who participated in this study are a fair approximation of African American family forest landowners in the US South (Table 2). The participants were representative of the general forest landowner population in terms of age, education, and forest area. However, women formed a larger proportion of the participants than among forest landowners at large. Participants had management plans at twice the rate of the general forest landowner population, which is perhaps a result of participants being contacted through the FVSU extension. Participants owned forestland in 17 counties and resided in 16 counties. One-third of the participants were absentee landowners. The absentee owners lived in five counties, which included large urban centers such as Atlanta, Macon, and Albany. Of the eight counties that contained forestland owned in absentia, six were rural, and none has a population greater than 15,114 (Fig. 1). One-quarter of the participants were heirs' property owners.

Management Typologies

Each of the four factors selected for interpretation represents a distinct typology of forest management (Table 3). The fourth factor included participants who loaded positively and negatively for the factor, and so both the factor and its inverse are interpreted below. In the following discussion of the typologies, the numbers in parentheses refer to the statement that

supports the interpretation of the typology. It is important to keep in mind that no typology is perfectly representative of any individual forest landowner; even participants who load for one of the factors have some characteristics of the others (Fig. 2).

Typology 1: Sustainable Harvester

The Sustainable Harvester exemplifies multiple use management, with a balanced approach to both timber and non-timber resources. The defining feature of this typology is agreement that timber could be a great future investment (#11), which is significantly different from other typologies at $\alpha = 0.05$. Sustainable Harvesters believe that forestry and conservation are compatible, and they reinforce this belief through an agreement that timber is a good investment (#11) and source of income (#9), that wildlife habitat is important (#7), and that their forestland has valuable resources apart from timber (#15). For the Sustainable Harvester, timber products are important, but they also see a place for non-timber forest products (NTFPs) (#13), highlighting their balanced priorities. Sustainability also implies a long-term view of the land, which is highlighted in this typology through the disagreement that timber is a too long term an investment (#5) and the land has no value beyond timber (#20). Instead, land ownership itself is intrinsically valuable to the Sustainable Harvester (#8). One landowner directly stated that timber management is about the future: "Pines are an investment in the future; an investment in the property and in the future. When I retire, at least I'll have that." Another also noted that sustainable management is an investment: "the trees will eventually make money. The last set didn't because we didn't manage them. We'll do these differently." For the Sustainable Harvester, the land itself is valuable, and a long-term timber investment is a way to improve the future value of the land. 'Legacy' was a term used frequently in participants' discussions. An elderly landowner said: "Oh yes. I want my children to have a legacy. To be able to say: "Paw Paw did this, Paw Paw did that." Another observed: "If your family left you a legacy, you want to pass it on if you can." The Sustainable Harvester considers timber,

Table 2 Characteristics of the General African American family forest landowner population and study participants ($N = 34$)

	General population	Study participants	References
Age	50–65	65	1,2,3,4
Sex (% Male)	68%	62%	2,4
Education (median achievement)	College	College	1,2,3,4
Management plan (%)	17%	30%	2,4
Forest area (ha)	20–40	25	1,2,3,4

General population characteristics are a composite of the literature on African American family forest landowners in the US South

1. (Gan and Kolison 1999), 2. (Gan *et al.* 2003), 3. (Schelhas *et al.* 2012), 4. (Schelhas *et al.* 2017a, b)

Table 3 The management typologies and their factor scores

Statement	Sustainable harvester	Back 40er	Land use pragmatist	Recreationalist	
				Recreationalist	Indecisive owner
1	-1*	0*	-2*	2*	-2*
2	0**	-2	2*	-2	2
3	0	-2*	0	0	0
4	0	-1	-2	-3*	3*
5	-2**	2	3	1*	-1*
6	-2*	-3	-3	0*	0*
7	2	1	-1	-2	2
8	3	3	3	1*	-1*
9	2	-2	2	-1	1
10	-1	-1	-3*	-1*	1*
11	3**	1	1	-2*	2*
12	-2**	0	0	2*	-2*
13	-3	2*	-1*	-3	3
14	0	0	1	0	0
15	2	3*	0*	2	-2
16	-1**	0	1	0	0
17	1	2	2	3	-3
18	1	1	0	3*	-3*
19	1	-1*	-2*	1	-1
20	-3	-3	-1	-1	1

The factors scores are a composite sort of the participants who load significantly for the factor

*: $p < 0.05$

** : $p < 0.01$

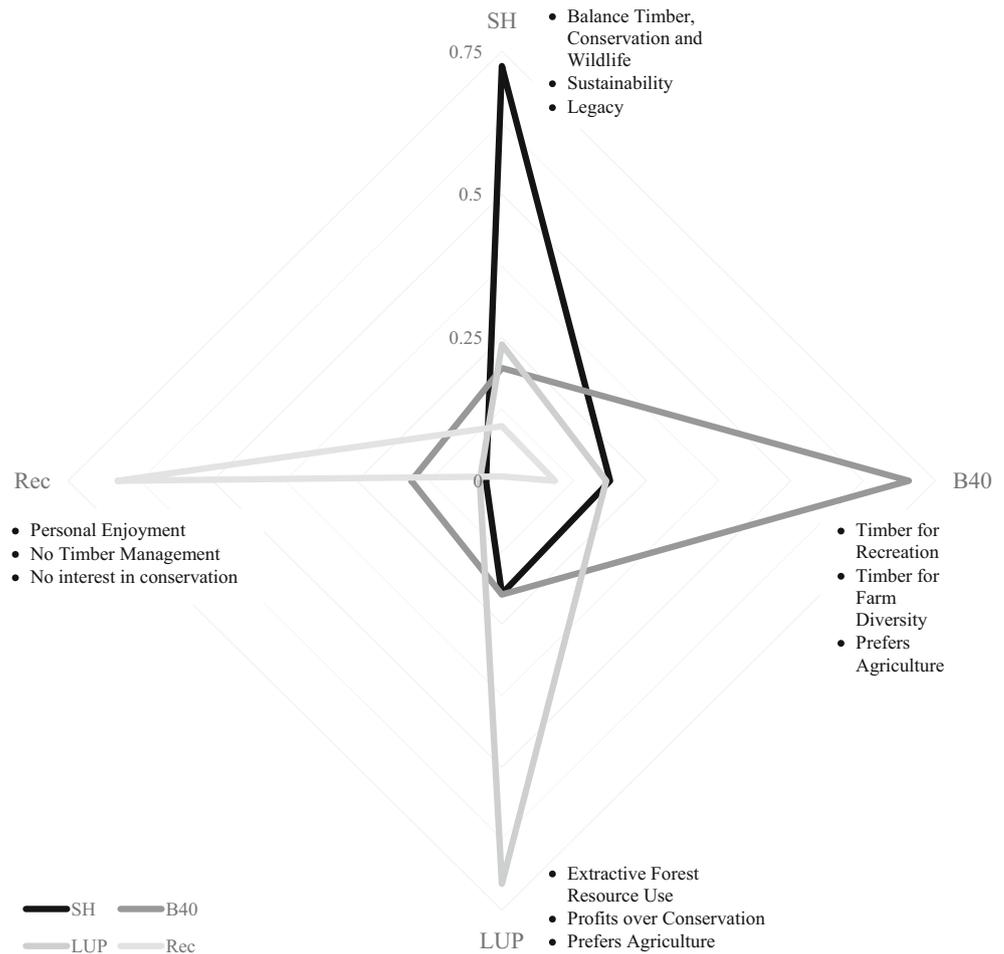
wildlife, and NTFPs to all be management goals and has a long-term view of the intrinsic value of his or her land, a view that often includes future generations.

Typology 2: Back 40er

In the United States, the ‘Back 40’ refers to one of the two back 40-acre sections of a 160-acre (64.7 ha) homestead and is a colloquialism for the remote or difficult to access part of a farm. The Back 40er appreciates the presence of forest on the land, but as a part of the background to more profitable land uses. Two significant features of this typology are lack of importance placed on NTFPs (#13) and importance of land as enabling the production of resources beyond timber (#15), demonstrating a lack of emphasis assigned to any forest product, timber or NTFP. Neutrality regarding timber for income (#1) further highlights that timber is not a management priority. Agreement that timber management could be a good investment (#11) demonstrates an interest in timber as a management goal for Back 40ers, although the agreement that timber is too long-term an investment (#5) seems to preclude any active investment or management of timber on the owner’s part, with timber production being opportunistic

rather than intentional. Instead, this typology characterizes those who see value in land uses other than timber (especially row cropping or pasture), as highlighted by a strong agreement that land has high intrinsic value (#8) and their land has valuable resources other than timber (#15, #20). One land-owner’s statements are typical of the Back 40er: ‘I want to diversify the property...maybe the front in forestry and farming in the back – it’s more flat land.’ The land itself is valuable to a Back 40er, and it has many valuable resources aside from timber. The Back 40ers also appreciate woods on their property, especially well managed or park-like woods, even if for nothing beyond personal enjoyment (#17, #18). Of all the typologies, the Back 40er group is the most well-educated, has the highest rate of employment, and are generally resident owners. It is possible that living on the property and having access to more income motivates the Back 40er to invest in more capital-intensive land use practices. More than any other typology, the Back 40er is distrustful of timber management advice (#3), perhaps because traditional timber management advice is so divergent from their land use goals. The Back 40er appreciates forests but sees little economic value in them, instead emphasizing the value of agriculture as an alternative to forestry.

Fig. 2 A visual representation of the four typologies. All four experience some overlap, just as all participants exhibit some degree of agreement with multiple typologies



Typology 3: Land Use Pragmatist

The Land Use Pragmatist appreciates the value of owning forestland, recognizes the role of forests in the environment, and is comfortable making tradeoffs of conservation for economic gain. This typology is best exemplified by an agreement that they must choose conservation or profits (#16) and disagreement that wildlife habitat is a management priority (#7), a strong deviation from other landowner typologies. The Land Use Pragmatist recognizes a tradeoff between economics and conservation and makes it clear that their priority is profit and not conservation. This prioritization is further supported by disagreement that timber harvesting can be done without harming nature (#19) and that concern for nature impedes their harvesting goals or activities (#10); the Land Use Pragmatist believes that harvesting is harmful to nature but will harvest anyway. Additionally, the short-term, extractive nature of this typology is highlighted by an agreement that harvesting timber is a good short-term income source (#9) and long-term investment (#11), but also a strong agreement that growing timber takes far too long (#5). The Land Use Pragmatist considers the extraction of both timber (#1) and NTFPs (#13) important. However, the Land Use Pragmatist

is more interested in using the resources currently available to her or him than in investing in future resources. One participant summed up the attitude nicely: ‘Trees – I prefer it all pasture land or farmland ... The trees are okay. I like to look at them. There’s no money. It’s a long, drawn out to set it out in pines. Might take 25 years before you can get a cut.’ Finally, the Land Use Pragmatists see value on their land beyond timber (#20), partly in non-timber resources (#15), though largely in the land ownership itself (#8). Together, this suggests that their management goals are motivated by making the land valuable through land uses like agriculture or ranching rather than investing in the future of the (limited) timber resources already on the land. The Land Use Pragmatist defines management priorities based on extracting value from timber on the land, with little interest in making long-term investments in timber or regard for the adverse effects of timber harvesting on the environment.

Typology 4a: Recreationalist

The Recreationalist values the forest less for its economic value than for its recreational or aesthetic value. The Recreationalist sees no present or future value in their timber,

made abundantly clear though disagreement with positive statements (#9, #11) and agreement with negative statements (#1, #5) about timber for income and investment. The Recreationalist also places a significantly lower value on the intrinsic value of the land (#8) and tends to see forest ownership as neither an economic benefit nor economic burden (#6). The land is not a source of value, security, or a burden; it is a place to enjoy. Simultaneously, the Recreationalist sees non-economic value in their forestland (#15, #20). The primary management objective is to create a place for the owner to enjoy, a natural setting (#17), perhaps managed to the landowner's tastes (#18) but never harvested to the extent it becomes unattractive to the owner (#12). The emphasis on creating a place to enjoy may not be surprising, considering that the landowners of this typology are the most likely to reside on their property and own on average the smallest (least commercially viable) forest tracts. It is important not to confuse a Recreationalist with an environmentalist. Although they are not interested in harvesting timber, it is for personal motives rather than environmental ones, as highlighted by agreement with the statement that timber *could* be harvested without harming nature (#19), and disagreement with statements about wildlife being a management priority (#7) and about refusal to cut timber in order to preserve nature (#10). The personal rather than commercial motives of this typology are given a final emphasis though the value they place on NTFPs like firewood (#13) as opposed to timber. The Recreationalist is interested in managing their forested land solely for personal enjoyment.

Typology 4b: Indecisive Owner

The Indecisive Owner is best understood in contrast to the Recreationalist. They assign no value to forest management for recreation (#12, #18), do not particularly value being in the woods (#17), and have no interest in NTFPs (#13). However, it would be a mistake to conflate the Indecisive Owner with either a Back 40er or Land Use Pragmatist. Unlike those two typologies, the Indecisive Owner sees little value in land uses other than timber (i.e., agriculture, pasture, etc.) (#15, #20), and they value timber as a source of income (#1, #9), and future investment (#11). Along with timber, the Indecisive Owner also values wildlife (#7), although this may be for consumptive rather than aesthetic reasons. And, unlike the Sustainable Harvester, the Indecisive Owner is uneasy about reconciling their multiple objectives; they recognize that timber production has environmental tradeoffs (#19) and are reluctant to harvest timber for that reason (#10), even though timber is clearly a management goal. Their unease is compounded by their lack of confidence in the professional advice they receive, both because they are not getting advice on the breadth of topics that interest them (#2) and because they are unsure whether the advice they get is what is best for

their management goals (#4). Indecisive Owners have a use-oriented view of forest landownership and multiple objectives they find difficult to reconcile, and they may be undecided about how to best manage their forest.

Discussion

One of the difficulties of generalizing forest landowner typologies is the extent to which they are dependent on local context (Blanco *et al.* 2015). This has not prevented several recent attempts to generalize forest landowner typologies at the global scale by synthesizing the results of diverse studies (Blanco *et al.* 2015; Silver *et al.* 2015; Urquhart *et al.* 2012). The syntheses generally agree in the number of broad typologies (5 or 6), and their typologies are analogous: Conservation, Consumption, Multi-objective, Passive, Production, and Recreation. Additionally, in a survey of the methodology applied to forest landowner typology problems, Ficko *et al.* (2019) identify the most common descriptors, the six most common of which are analogous to the six general typologies identified in the review papers. The four typologies we identified among African American family forest landowners all align with the general typologies identified, although the fit is not always perfect considering differences across scales (local and global). The Sustainable Harvester aligns well with the Multi-objectivist and the Recreationalist with the Recreationalist. We consider the Land Use Pragmatist to align most closely with the Production typology and Back 40er with the Consumption typology; we make this distinction because Land Use Pragmatists generally place little value on anything but economics, while the Back 40er consider factors other than profit an important (if minor) component of forestland ownership. Indecisive Owners are the most difficult to align with the global level typologies. They share characteristics with the Multi-objective (interest in conservation and economics), Consumption (interest in timber and hunting), and Passive (possibly a case of paralysis by analysis) typologies. To forcefully align the Indecisive Owner with just one of the three is unnecessary and unproductive. They represent a voice that is unique to African Americans in the US South that has been overlooked or ignored in other research.

While the typologies we identify are well aligned with those on the global scale, Blanco *et al.* (2015) have highlighted the difficulty deriving specific policy applications from global, generic typologies. Instead, policy recommendations should be derived from local typologies along with local context, which in the case of African American family forest landowners includes the well-documented constraints they face in engaging in forest management. In addition to the factors previously discussed, it is important to highlight that 38% of African American family forest landowners considered lack of knowledge a primary barrier to forest

management, second only to financial resources (49%) (Gan *et al.* 2003; Gan and Kolison 1999; Schelhas *et al.* 2012). An elegant solution to limited financial resources would seem to be utilizing financial assistance programs like the Natural Resource Conservation Service's Conservation Reserve Program (CRP), Environmental Quality Incentive Program (EQIP) including the Longleaf Pine Imitative (LLPI), and Healthy Forest Reserve Program (HFRP). However, research shows that African Americans have not engaged in financial assistance programs to the same degree as white forest landowners (Gan *et al.* 2005). Underutilization of these programs remains a key constraint on African American forest management as a result of lack of awareness (Schelhas *et al.* 2018), lack trust between forest landowners and forest professionals (Dwivedi *et al.* 2016), and the challenges of heirs' property ownership. Understanding the typologies presented here will not help forest professionals overcome many of these constraints. However, understanding them may be important in helping forest professionals present forest landowners with information that aligns with their management goals.

For example, a Land Use Pragmatist may be receptive to information about the benefits of reforestation the EQIP program, but not from the HFRP or CRP programs, which emphasize the ecological value of forests. They may respond positively to information about the benefits of agroforestry (especially silvopasture) to livestock, although it is something about which landowners and even forest professionals often need more data (Stutzman *et al.* 2019). Based on their typology and the thoughts articulated in the qualitative interview, the Sustainable Harvester is very receptive to traditional forest management information that emphasizes economic, environmental, and future benefits, and may be open to participating in a program like CRP or HFRP. However, Sustainable Harvesters also have the highest rates of heirs' property ownership and resolving issues arising from this is an important first step toward improved forest management; something forest professionals should be aware of. As with the Land Use Pragmatist, the Back 40er will likely be less receptive to information that emphasizes forestry as a land use that is distinct from agriculture, but may positively respond to an emphasis on, for example, pine straw from longleaf pine (*Pinus palustris*) as a source of income (Dickens *et al.* 2012). The LLPI could help landowners in this regard, and while land enrolled in CRP cannot be raked for pine straw, post-CRP land can be very productive for pine straw. The Recreationalist is likely to be unmotivated by either economic gain or active environmental protection. While their small tracts have little impact on regional or even local timber markets, these landowners can play an important role in providing both wildlife habitat and ecosystem services. Management professionals can help them ensure compliance with best management practices, for example,

to limit trail erosion and respect riparian buffers, and possibly encourage them to consider options like long-term enrollment in HFRP or even applying for a conservation easement. For the Indecisive Owner, the most important first step may be to simply talk with a forest professional about their ideas, or even connecting them with peers who already practice forest management. Recent research suggests that social networks, and especially connections to knowledgeable and trusted individuals are key to engaging African Americans in sustainable forestry (Hitchner *et al.* 2019). African American landowners prefer information from personal contacts rather than print media (Gordon *et al.* 2013). An emphasis on personal connections to Indecisive Owners is especially important at a time when forest professionals are reducing the amount of time they spend with individual landowners (Dwivedi *et al.* 2016)

While the available programs address the environmental and economic needs of all four typologies if they reach the right audience, they are unsuccessful in addressing the cultural aspect of forest landownership, something that is especially important to the Sustainable Harvester, the Back 40er, and the Recreationalist. The importance of culture and connection to the land was highlighted in the qualitative interviews. There are already programs that address cultural heritage, although they have two potential shortcomings: that both landowners and forest professionals have very little knowledge or awareness of these programs, and that they typically address sites of historical or archeological importance and not the aspects of a forest property that make it significant to the landowner. One recommendation we would make is for policymakers to consider not only what a forest can provide but also what it already provides to its owners in terms of cultural, historical, and future significance.

Conclusion

Much of the literature treats minority family forest landowners as a homogenous group. To our knowledge, there is no literature that explores the intragroup differences of African Americans in a natural resource context. Our work demonstrates that although African American family forest landowners are superficially homogenous, their views about forest management are diverse. Information about forest management should account for the diversity of viewpoints, even while accounting for the special circumstances surrounding African American landowners.

Our findings provide important insights into African American forest landowners' outlooks and how to serve their forest management objectives in an effective manner. However, they also raise several new questions. First, in order to address the validity of our assumption about differences between African American and white forest landowners we

plan to repeat our study methodology with white forest landowners from the same region. Second, although we addressed, to a degree, the motivations of the different management outlooks of African Americans in the qualitative interviews, we plan on conducting in-depth research into the connections between African American family forest landowners and their forestlands. Finally, the results from this work are exploratory, and there is an opportunity to use the typologies we have proposed as the basis for research that is representative of the population at large.

It is important to recognize the possibility that participants in this study are not representative of the African American forest landowner population. Compared to the literature, participants included more farmers and were more interested or actively engaged in forest management than what is typical. This makes sense considering their connection to the Fort Valley State University Cooperative Extension. However, we do not believe it diminishes the validity or importance of our work.

Aside from providing insight into African American family forest management, our research contributes to a small but growing body of literature that uses Q Method to understand natural resource issues. It highlights how the method can be used to explore the diverse viewpoints of seemingly homogenous populations to design and implement natural resource management programs that contribute to increasing prosperity of family forest landowners, maintaining the ecological integrity of forested landscapes, and supporting vibrant rural communities.

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Author Contributions NG collected and analyzed the data and wrote the paper. PD conceptualized the idea, wrote the paper, and supervised the overall research. SH and JS conceptualized the research and conducted qualitative interviews. MT conceptualized the research and supervised data collection.

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Compliance with Ethical Standards

Human Subject Research Approved by the University of Georgia's Internal Review Board (# STUDY00005338).

Conflict of Interest The authors of this manuscript declare that they have no competing interests between the work presented in this manuscript and any other work in which they are engaged.

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