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Beauty Is in the Eye of the Beholder – U.S. Consumers' Perceptions of Native Plants

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Native plants in the U.S. are defined as those that were present prior to European settlement (USDA, 2023). Recently, consumers' interest in native plants has increased, which is partially due to the perceived environmental benefits and consumer interest in aiding the environment in general (American Society of Landscape Architects, 2023; Rihn et al., 2023). However, some resistance occurs due to perceptions of native plants having "messy" or unpleasant aesthetics and community social norms desiring more traditional landscapes (Gillis and Swim, 2020; Peterson et al. 2012). Given the increased demand for native plants, this report summarizes a 2022 research study addressing customer perceptions of native plants to identify what drives their growing demand. The research identifies three consumer clusters (or segments) based on these results, which can be used in targeted marketing strategies. Target marketing occurs when groups of customers respond similarly to marketing stimuli, meaning that marketing efforts can be tailored to more efficiently reach a specific cluster of customers. Results are relevant to ornamental plant growers, landscapers and garden center retailers who sell native plants or are interested in incorporating them into their product portfolios.

Methods

An online survey of 2,066 U.S. consumers was conducted in 2022 to determine how they perceive native plants (in general) and factors that may influence those perceptions. Participants were adults (18+ years old) who made garden/landscape purchases in their households. Participants were recruited equally across the five U.S. regions. They were divided into three groups (termed "clusters") named "Native Averse," "Native Curious" and "Native Enthusiast" (described shortly). Perceptions were determined based on the level of agreement (1=strongly disagree; 4=neither agree nor disagree; 7=strongly agree) with 17 different native plant statements and five native plant attributes. The native plant statements were divided into nine "positive" statements where they tout perceived benefits of native plants and eight "negative" statements related to native plants (Table 1). The five native plant attributes included aesthetically pleasing, wildlife friendly, pollinator attractive, complement existing landscape and natural habitat restoration. Participants were instructed to answer questions while considering native plants (in general) that are native to their region of residence. Significant differences between clusters were identified to facilitate target marketing strategies.

Table 1. List of Statements Used to Assess U.S. Plant Purchasers' Perceptions of Native Plants.

Positive Statements	Negative Statements
1. Native plants improved biodiversity.	1. Native plants are not as prestigious as exotic plants.
2. Native plants are better for the environment than exotic plants.	2. Native plants are more expensive than exotic plants.
3. Native plants are readily available in my area.	3. I am concerned about the performance of native plants in my landscape.
4. I know where to shop to purchase native plants.	4. I am not interested in planting native plants.
5. Native plants are better adapted to difficult sites.	5. Native plants are not readily available in my area.
6. Native plants require less maintenance than exotic plants.	6. Native plants look messy and unattractive.
7. Native plants are drought resistant.	7. There is not much information available about native plants.
8. Native plants are beneficial to the economy.	8. Plant nativeness is less important to me than having the right plant for the right place.
9. Native plants help with water conservation.	

Unique Consumer Clusters

Three clusters were developed based on the native plant perceptions and native attribute ratings. The clusters were named the “Native Averse” (32 percent of the sample), “Native Curious” (33 percent of the sample), and “Native Enthusiasts” clusters (36 percent of the sample; Figures 1-3). The figures demonstrate clear perception differences across the clusters. Understanding the differences between the clusters enables more efficient and effective target marketing strategies when focusing on specific groups.

Figure 1 shows participants agreement with positive native plant perceptions. Most participants agreed that native plants are better adapted to difficult sites relative to introduced species (5.4 out of 7), followed by require less maintenance, help with water conservation, are better for the environment relative to exotic plants and benefit the economy. The Native Averse cluster exhibited the lowest level of agreement with all of the native plant benefit statements. Conversely, the Native Enthusiasts had the highest agreement ratings for the water conservation, improved biodiversity, environmental benefits, availability and knowing where to shop for native plants statements while Native Curious members had intermediate ratings for these statements. The Native Enthusiast and Native Curious clusters had similar ratings for native plants being better adapted to difficult sites, requiring less maintenance, being beneficial to the economy and being drought resistant.

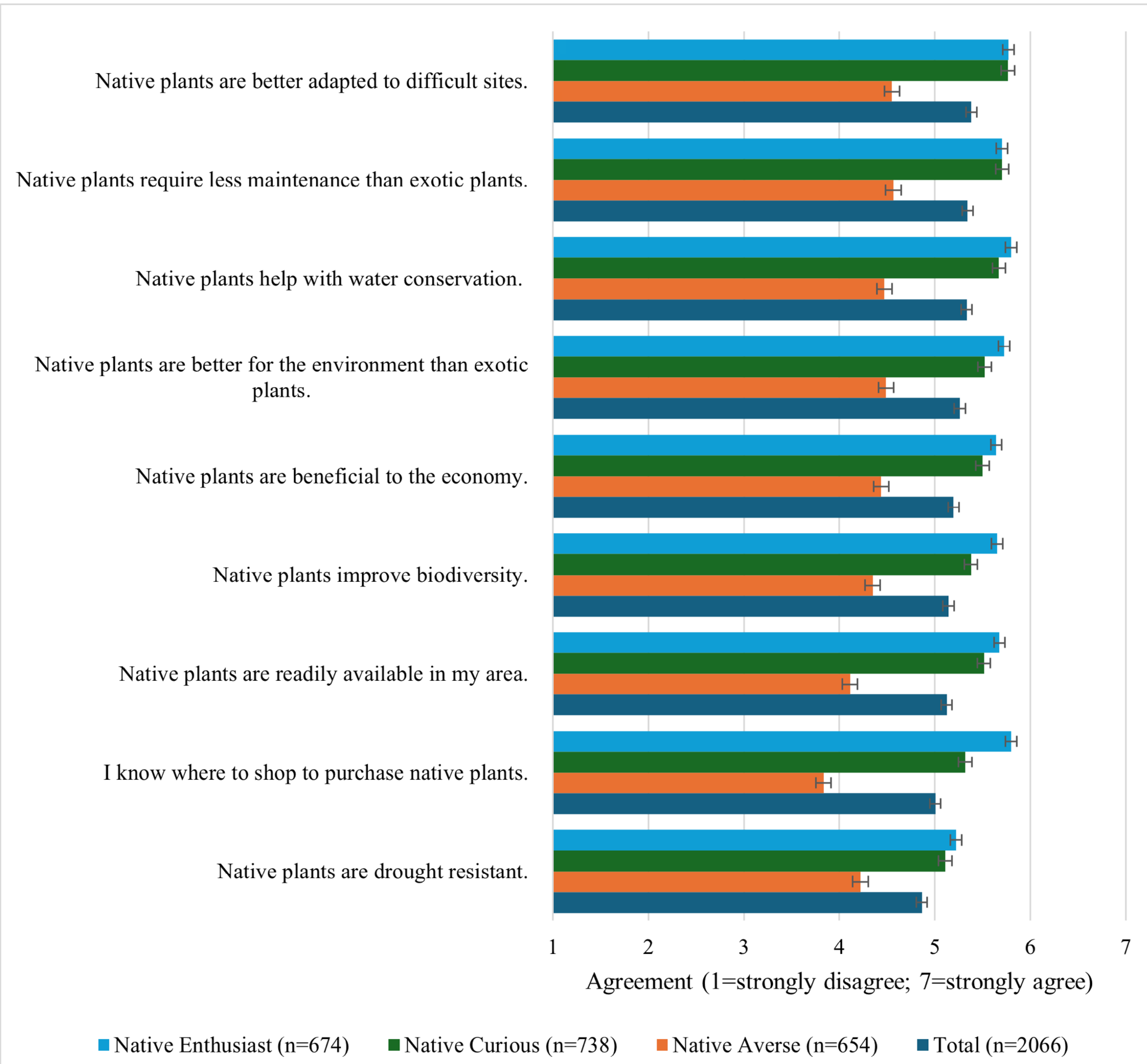

Figure 1. *U.S. Consumer Ratings of Agreement with Native Plant Positive Benefit Statements.*

Figure 2 shows the negative native plant perception statement ratings. Generally, participants disagreed with these statements (see total sample ratings which are less than 4 for all statements). They disagreed most with having no interest in planting native plants (2.3 out of 7), followed by native plants look messy and unattractive, and native plants are unavailable in the area. The Native Enthusiasts disagreed with the negative perception statements the most. Although, they agreed with the statement that plant nativeness was less important than having the right plant for the right place (4.5 rating out of 7). The Native Curious cluster exhibited intermediate ratings between the other clusters, except for the statement that native plants are more expensive than exotic plants where the Native Curious and Native Enthusiast clusters exhibited similar ratings. The Native Averse cluster exhibited the highest level of agreement with all of the negative perception statements.

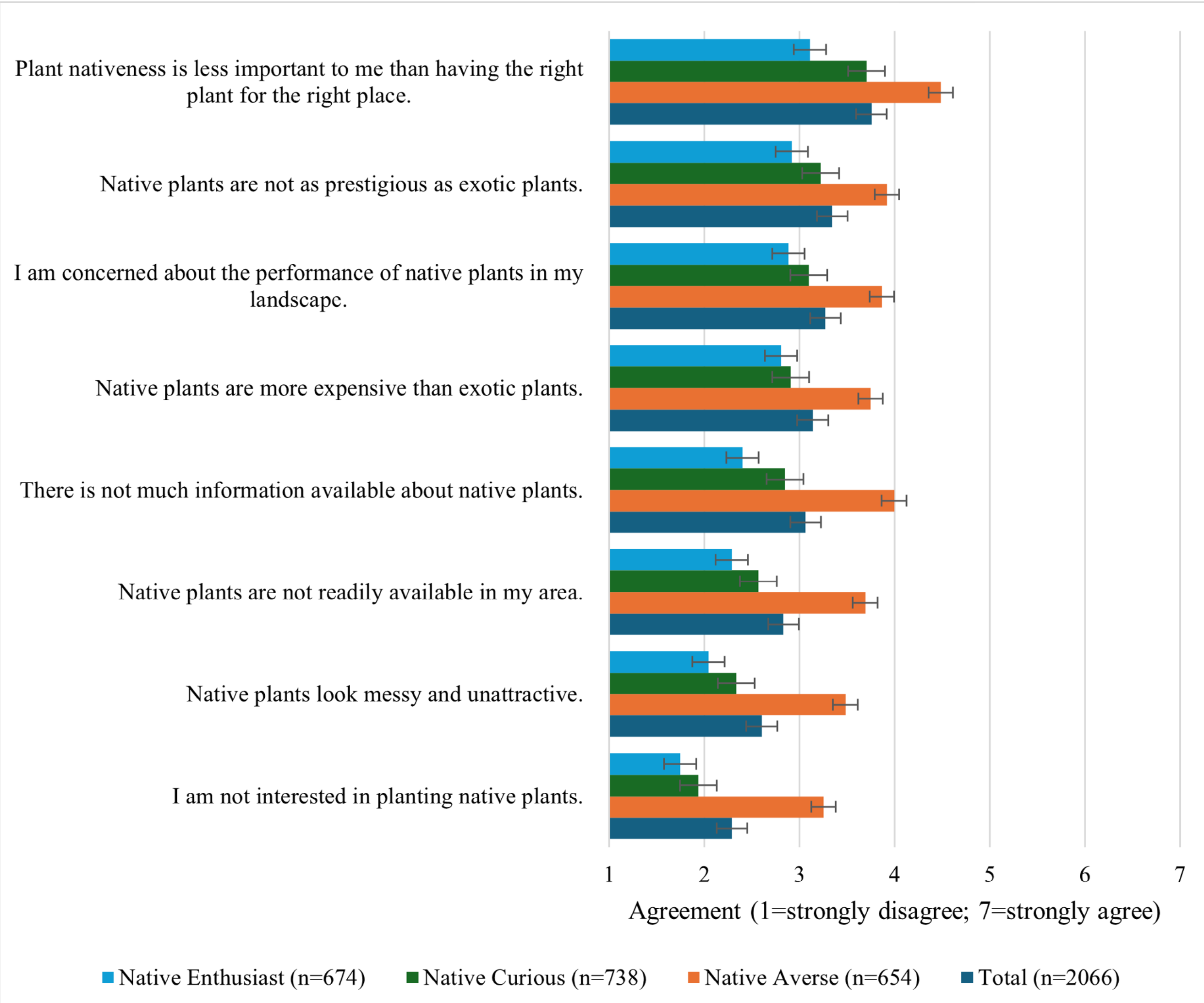

Figure 2. *U.S. Consumer Ratings of Agreement with Native Plant Negative Perception Statements.*

Lastly, Figure 3 shows participants' perceptions of native plant attributes with pollinator friendly being the main attribute selected, followed by complements previous plantings/gardens, natural habitat restoration, aesthetically pleasing and wildlife friendly. A larger portion of the Native Enthusiast cluster agreed that native plants attract pollinators (78 percent), complement previous plantings/gardens (59 percent), restore natural habitat (60 percent), are wildlife friendly (55 percent) and are aesthetically pleasing (49 percent) relative to the other two clusters. The Native Curious cluster exhibited intermediate ratings between the Native Averse and Native Enthusiast clusters, except for the wildlife friendly attribute where the cluster was comparable to the Native Averse cluster. The Native Averse cluster exhibited lower agreement with the remaining native plant attributes relative to the other clusters.

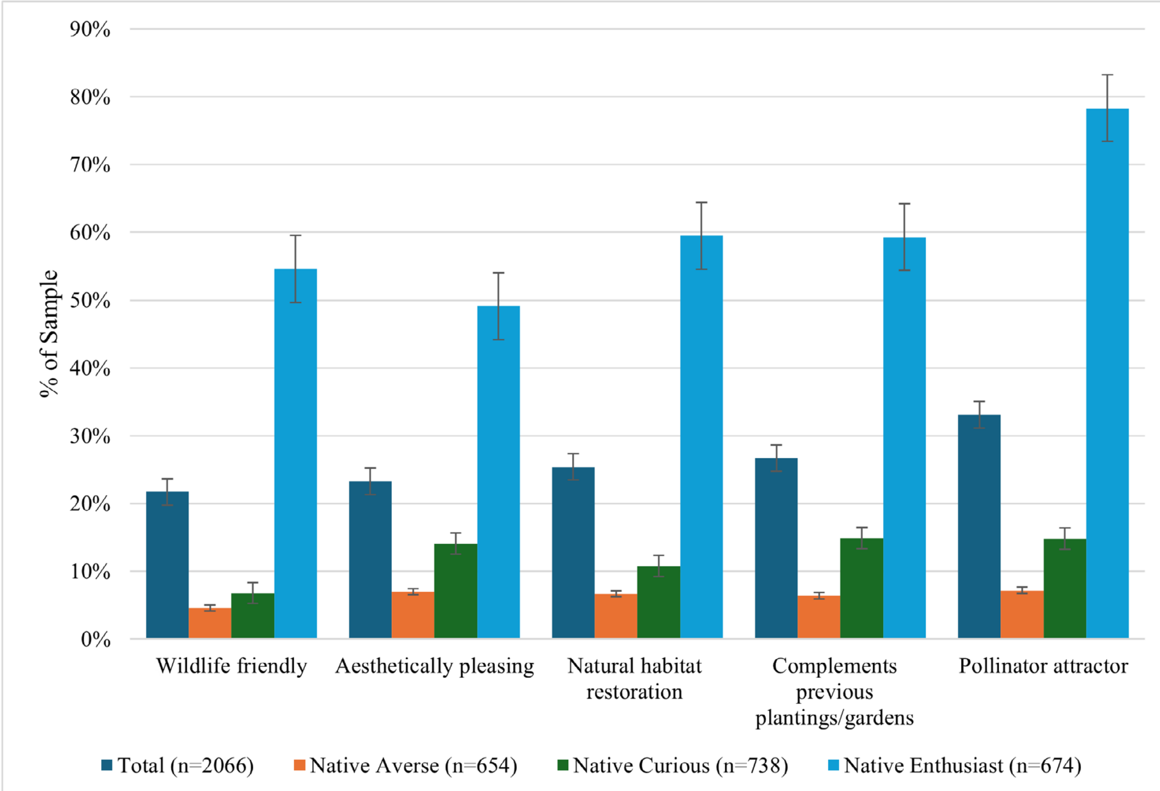

Figure 3. *Percent of the Sample, Total and by Cluster, that Perceive Native Plants as Exhibiting the Listed Attributes.*

Demographics and Purchasing Behaviors

Demographic and purchasing behavior differences were noted across clusters. The Native Averse cluster had an annual household income of $73,226, which was below the sample average (Table 2). The largest portion of the cluster lived in urban areas (44.5 percent), followed by rural (42 percent) and suburban (14 percent) areas. A large portion also lived in the Western U.S. (46 percent), followed by the Northeast (19 percent) and Midwest regions (18 percent). Native Averse cluster members had the lowest proportion of respondents with a bachelor's degree or higher (39 percent). Among all three clusters, the highest proportion of females (78.6 percent) was in this cluster. Native Averse members had the lowest rating for both subjective native plant knowledge (2.2 out of 5) and perceived importance of native plants (2.7 out of 5), as well as the lowest spending on plants overall ($171.18) and native plants ($46.71) in the year 2021 (Table 3). Only 28 percent of consumers in this segment purchased native plants, which is the lowest among the clusters.

Table 2. Summary of Total and Cluster Specific Demographic Characteristics.

Demographic variables[1]	Total Mean	Cluster 1 - Native Averse Mean[2]	Cluster 2 - Native Curious Mean[2]	Cluster 3 - Native Enthusiast Mean[2]
Live in the Northeast	19.5	18.5 a	15.4 b	24.9 a
Live in the Midwest	20.4	17.7 a	30.5 b	12.0 c
Live in South	19.8	16.4 a	24.1 a	20.3 b
Live in West	39.2	46.6 a	29.4 b	42.6 b
Age (in years)	57.1	57.5 a	57.8 a	56.0 a
Female	76.7	78.6 a	78.5 a	72.8 b
Education (Bachelor's degree or +)	45.7	39.3 a	46.3 a	51.2 b
Live in urban area	13.4	44.5 a	44.3 b	45.4 a
Live in suburban area	44.7	13.9 a	13.3 a	13.1 a
Live in rural area	41.9	41.6 a	42.4 a	41.6 a
Income (in $1000)	74.72	73.23 a	76.73 a	78.33 a

[1]All demographic variables were measured in percent of the sample, except age and income which were continuous variables.
[2]Different letters (a,b,c) indicate significant difference between the clusters at the 5% level.

Table 3: Summary of Native Plant Purchasing Behavior by Different Consumer Segments in the U.S.

Purchasing Behavior	Description	Total Mean	Cluster 1 - Native Averse Mean[1]	Cluster 2 - Native Curious Mean	Cluster 3 - Native Enthusiast Mean
Plant spending	Spending on plants in 2021	$206.87	$171.18 a	$182.52 a	$268.18 b
Native spending	Spending on native plants in 2021	$178.26	$46.71 a	$76.42 b	$187.31 c
Native importance	Importance of native plants (1=very unimportant to 5=very important)	3.4	2.8 a	3.5 b	4.0 c
Native knowledge	Knowledgeable about native plants (1=not at all to 5=extremely knowledgeable)	2.6	2.2 a	2.6 b	2.9 c
Purchased natives	Proportion of sample who purchased native plants in 2021	58%	28% a	46% b	100% c

[1]Different letters (a,b,c) indicate significant difference between clusters at the 5% level.

The Native Curious cluster is characterized by an annual household income of $76,730, which was above the sample average (Table 2). The largest proportion of this cluster lives in urban areas (46 percent), followed by rural areas (42 percent). Native Curious cluster members are 78.5 percent female. In terms of both native plant knowledge (2.6 out of 5) and importance (3.5 out of 5), this cluster lies with intermediate ratings compared to Native Averse and Native Enthusiast clusters (Table 3). In 2021, consumers in this cluster spent $182.52 on plants (in general) and $76.42 on native plants, on average, both of which are higher than the spending of Native Averse but less than Native Enthusiasts.

The Native Enthusiast cluster has consumers with the highest annual household income ($78,330; Table 2). The average age of this cluster was 56 years, which is less than the sample average. This cluster had the highest percentage of consumers with at least a bachelor's degree (51 percent). Around 45 percent of them live in urban areas, followed by rural (41.6 percent) and suburban (13 percent) areas. The cluster was characterized as having the highest rating for native plant importance (4.0 out of 5) and knowledge (2.9 out of 5). Cluster members, on average, spent the most on both plants in general ($268.18) and native plants ($187.31) when compared to other clusters (Table 2). All cluster members purchased native plants in 2021 (Table 3).

Conclusion and Implications

This report highlights the diversity in perceptions and behavior of U.S. consumers towards native plants. By categorizing consumers into three distinct clusters, the study provides actionable insights for ornamental plant growers, retailers and stakeholders who have native plants as part of their product portfolios. The cluster analysis identifies different consumer perceptions and barriers when considering native plant purchases. Understanding distinct consumer clusters allows for the development and implementation of targeted marketing strategies. For instance, the Native Curious cluster represents members of the population who tend to view native plants positively, are receptive to native plant purchases and serve as an opportunity for market growth. This cluster demonstrated moderate interest and spending, suggesting they are open to adopting native plants but may need encouragement (e.g., promotion of biodiversity benefits, environmental benefits, and native plant retailers and availability). Consumers who are Native Enthusiasts recognize potential benefits of using native plants in their landscapes and would gravitate to those items if they are aware of their availability. Using point-of-sale information (e.g., signs, logos, tags) is one way to engage and direct this customer segment toward native plant options. Evidence suggests that even if native plants are available in retail centers, they are not always labeled (Brzuszek & Harkess, 2009), meaning customers rely on their own judgements to determine if the plant is native. Furthermore, some consumers have preexisting perceptions of native plants being less aesthetically pleasing than introduced species (Beck et al., 2002). Using in-store displays and demonstrations that highlight the visual appeal and use of native plants could counter these perceptions. The use of in-store point-of-sale information and demonstrations would likely appeal to the Native Curious and Native Enthusiast clusters and help generate sales among those two groups.

Acknowledgements: This research was supported by a grant from the Horticultural Research Institute (HRI). Its contents are solely the responsibility of the authors and do not necessarily represent the views of HRI.

Source: Rihn, A.L., A. Torres, B. Behe, and S. Barton. 2024. Unwrapping the native plant black box: Consumer perceptions and segments for target marketing strategies. HortTechnology. 34(3): 361-371. https://doi.org/10.21273/HORTTECH05401-24.

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