

Gender and Species Use in Amazonian Home Gardens: the Social and Economic Context of Biodiversity Conservation



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Introduction

Home gardens, “the peridomestic area belonging to the household where members plant and/or tend useful plants” (Perrault-Archambault and Coomes 2008), are found throughout the world. However, their use and importance vary from region to region. In the Peruvian Amazon, owners use home gardens for a domestic supply of foods, craft materials, medicines, condiments, and shade (Miller and Nair 2006). With this wide range in function, reflected in species content, home gardens are very biodiverse.

Home garden biodiversity may be increasingly important in a rapidly changing Amazonia (Betts et al. 2008). Thus, the sociocultural and economic factors contributing to home garden diversity warrant in-depth study. Existing data posit a direct positive relationship between female garden tenders and species diversity (Perrault-Archambault and Coomes 2008) as well as report a simultaneous increase in sales of indigenous plant products and monocropping (Perrault 2005). Nevertheless, limited research exists on home gardens as reservoirs for species conservation (Ban and Coomes 2004b).

We hypothesize both the gender of the caretaker and market integration impact levels of species richness in home gardens, with female garden managers increasing biodiversity and market integration decreasing biodiversity as caretakers favor more marketable species.



Fig. 1. Photo of a home garden in the San Pedro* community. The garden is bordered by *Erythrina fusca*, which acts as a living fence. Photo by David Salisbury.

*San Pedro is an acronym used to protect the identity of the village studied.

Materials and methods

We used participatory and ethnographic methods to conduct our exploratory investigation in July of 2009. We began our research in the markets of Pucallpa, an Amazonian city off the Ucayali River, where we interviewed plant vendors concerning the products they sold and from where these crops came.

Following Pucallpa, we traveled by boat to San Pedro, a village of 52 households off the Atalaya River*, to conduct twelve days of fieldwork inventorying home garden species and observing the division of labor within the garden. Initially, we consulted with community leaders to select eight home gardens managed by key informants with advanced ethnobotanical knowledge. We gathered data through semi-structured interviews of the male and female head-of-household and through species mapping.

*The Atalaya River is an acronym used to protect the location of the village studied.



Fig. 2. Photo of Leigh Ann West and informant conducting income-generation activity. Informant placed beans in different quantities on pictures according to the amount of income generated by these plants. Photo by Ana Issela Ríos-Sanchez.



Fig. 3. Photo of Leigh Ann West transcribing map of informant's home garden, which was originally sketched in a notebook while the researchers walked the garden with the informant. Photo by Ana Issela Ríos-Sanchez.

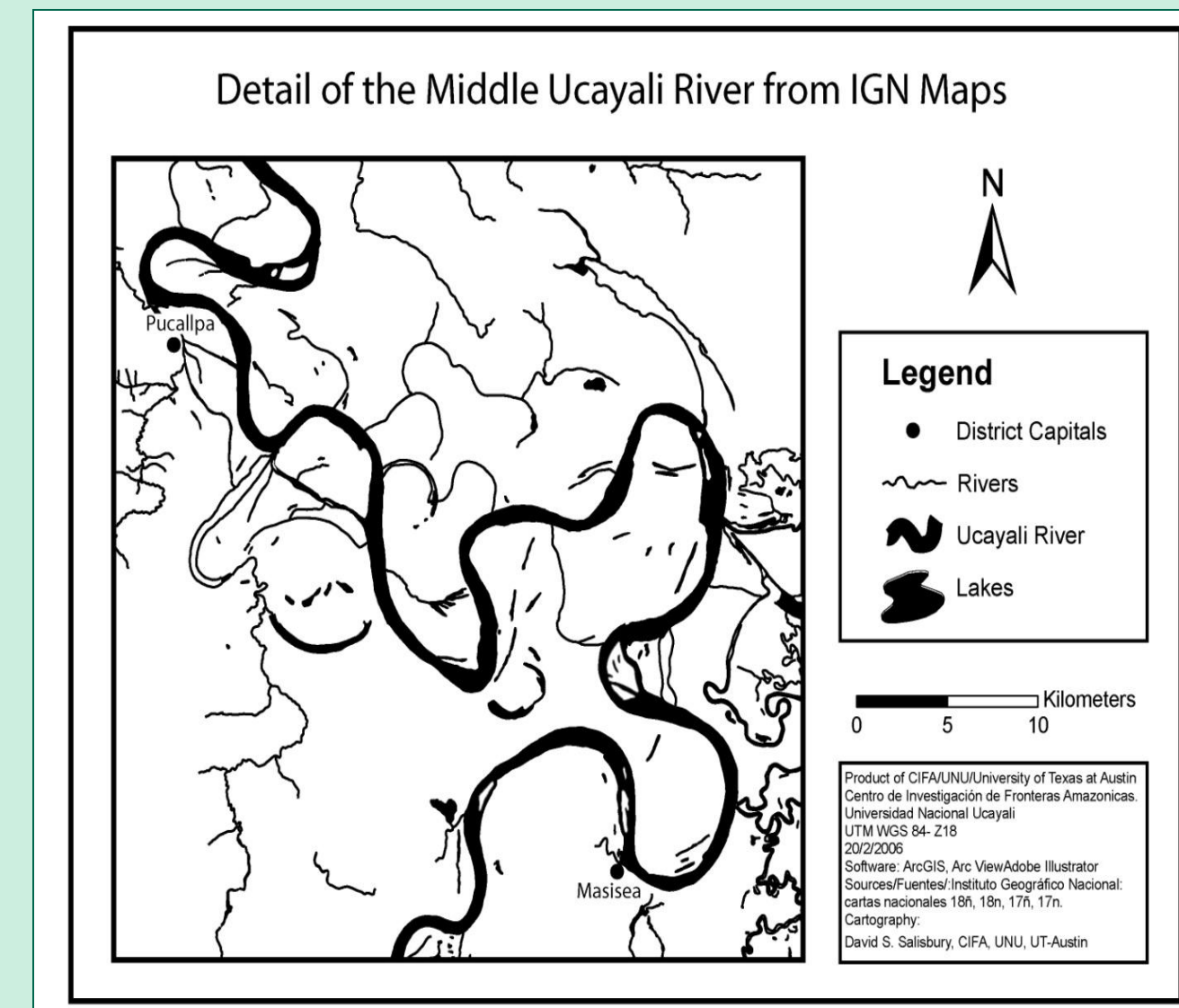


Fig. 4. Map of study location. Pucallpa and the Ucayali River.

Results

Our results show data concerning the number, types, and frequency of plants in San Pedro home gardens. They also include observational and interview data related to species knowledge and division of labor.

Garden demographics:

- **31.5** average species per garden (compared with **16.3** in Ban and Coomes studies)
- **95** different species identified in San Pedro (compared with **89.6** average in Ban and Coomes and Perrault-Archambault and Coomes studies)
- **20-46** species range per garden in sample home gardens

Home garden use:

- Primarily used for subsistence
- Products do not generate large income, but, given the opportunity, informants would sell garden products in markets
- Informants' valued food crops above plants with other uses

Division of labor:

- Men do heavy lifting
- Otherwise, tasks within the garden are not gender-specific

Most important plants as ranked by informants:

- *Musa paradisiaca* (Plantains) – food
- *Cyperus articularis* (Piri piri sedge) – medicinal
- *Quararibea cordata* (Zapote tree) – food
- *Citrus limon* (Lime) – food, medicinal

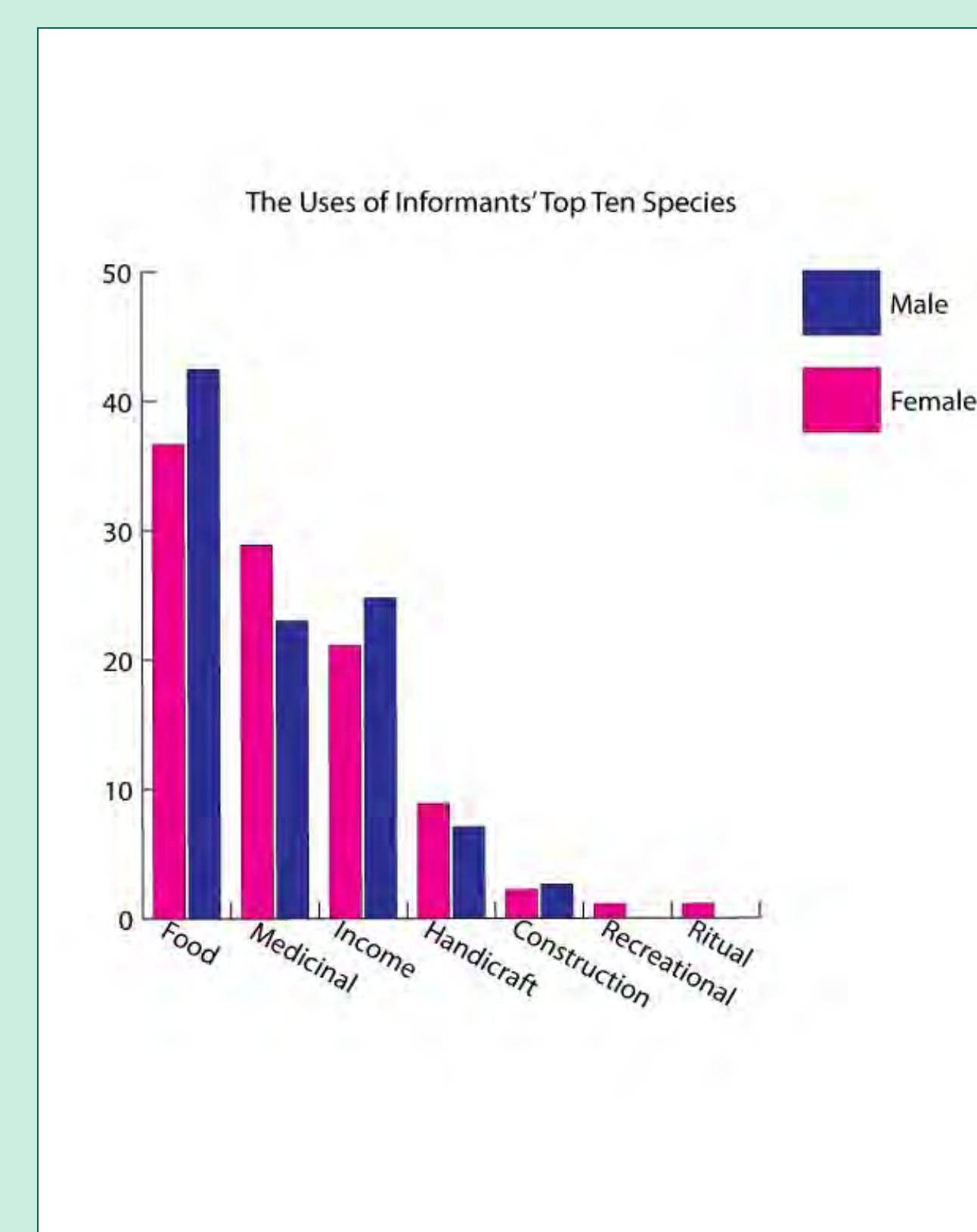


Fig. 5. This graph shows the uses of the informants' top ten species, categorized by gender. There is no distinct difference between genders concerning species preference.

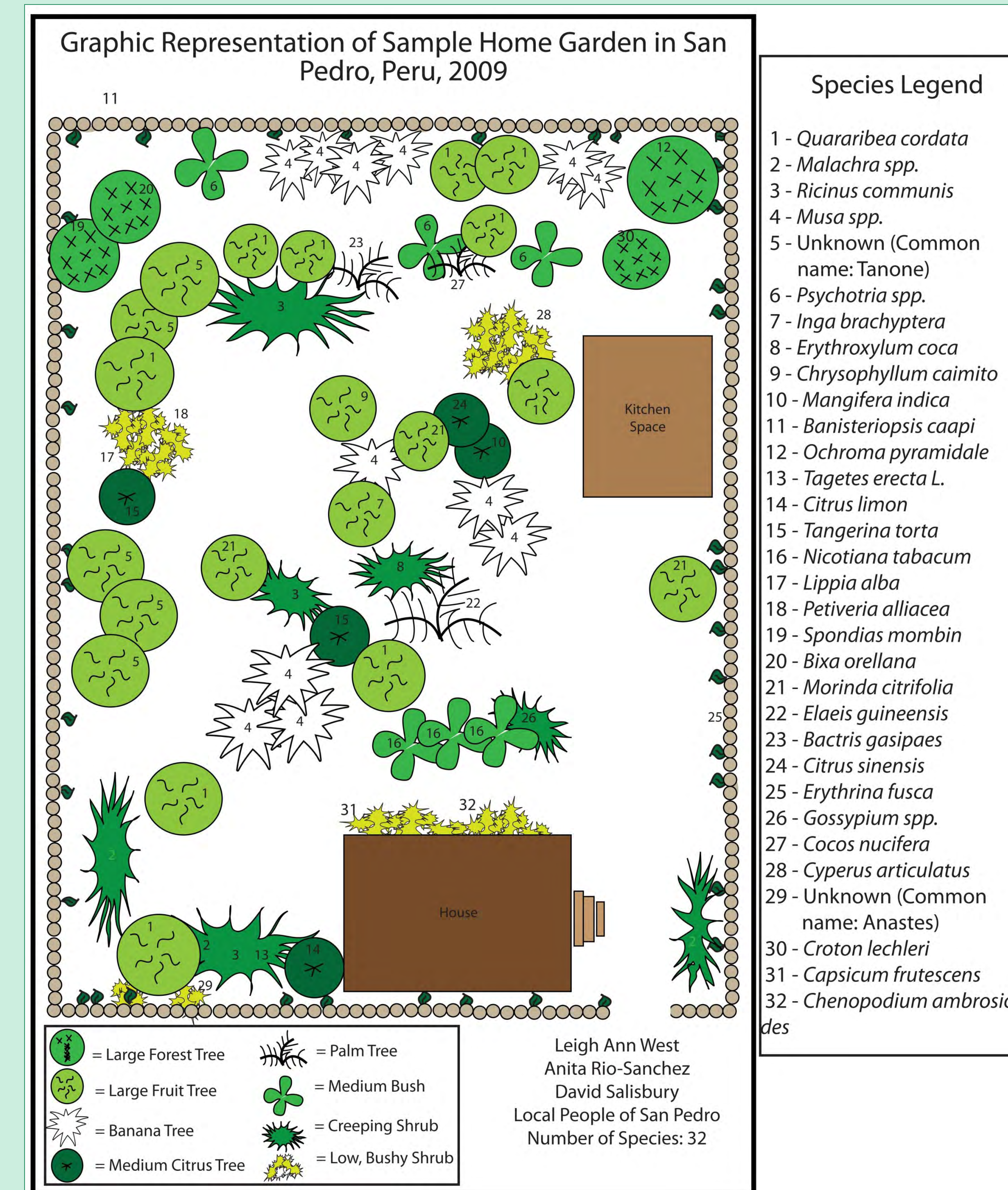


Fig. 6. This figure shows an aerial view of a sample home garden. This graphic representation demonstrates how home gardens act as an extension of the home, with household dwellers passing through the garden moving to and from living quarters. We posit the proximity of the garden to the house increases the likelihood plants will be maintained, improved, or added.

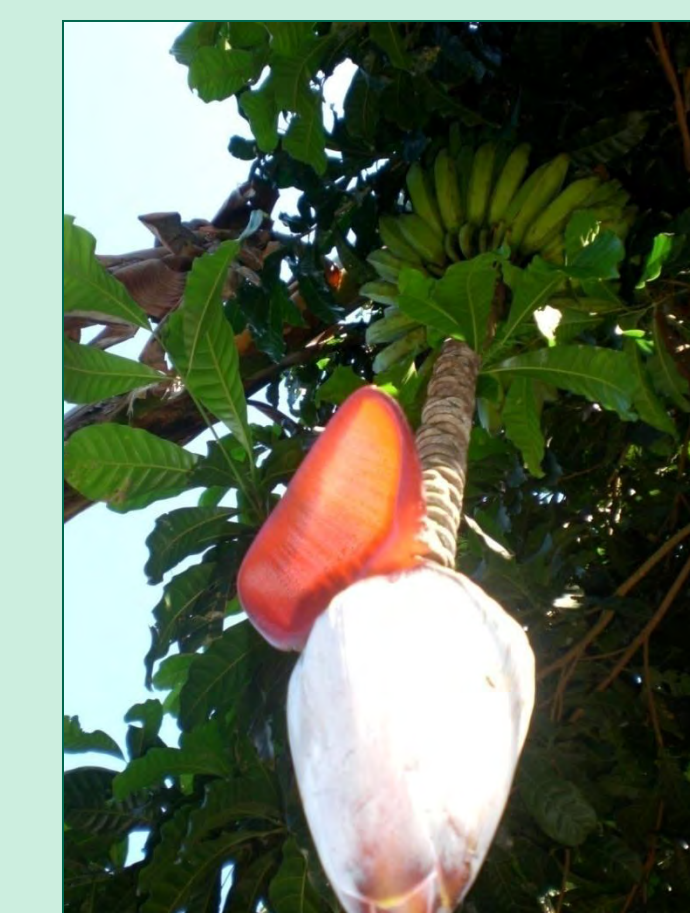


Fig. 7. Photo of *Musa paradisiaca*, the most important staple food species as ranked by San Pedro informants. Photo by Leigh Ann West.



Fig. 8. Photo of Ana Ríos-Sanchez with *Psychotria* spp., a medicinal plant frequently used in brews to accompany the hallucinogenic vine *Banisteriopsis caapi*. Photo by Leigh Ann West.

Conclusions

Home gardens in San Pedro showed higher levels of biodiversity than other studies in the Peruvian Amazon (Ban and Coomes 2004, Perrault-Archambault and Coomes 2008) and were primarily used for subsistence. As we hypothesized, home gardens used for subsistence accentuated diversity given the absence of income for food, medicine, tools, clothing, and other amenities. Informants sold few garden products because transportation to large city markets was time-consuming and expensive in comparison to the close proximity and minimal costs of competing vendors.

Refuting our hypothesis, we identified no gender-driven disparity in species knowledge between male and female informants. Male and female heads-of-household exhibited and invested analogous knowledge, interest, and labor in their home gardens. Children contributed to crop maintenance as well. Thus, at the local scale, conservationists can, and potentially should, appeal to all household residents when seeking species knowledge and/or developing sustainable agricultural practices.

Our research also suggested the proximity of the home garden to the living space is a key geographic element. Frequently walking through the garden may increase the likelihood plants will be nurtured, prioritized, and added. Consequently, researchers need to better understand the unique impact proximity has on the maintenance of agrobiodiversity.

The study of home gardens is relevant to the changing contexts of biodiversity conservation. In the face of increased market integration, home gardens, which are reservoirs of useful species for subsistence and cultural identity, may provide resilience to changing social and economic conditions.



Fig 9. Shipibo-Conibo indigenous family. Photo by David Salisbury.

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For further information

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