

The **BIOCULTURAL DIVERSITY
OF LIVING INDIGENOUS
SACRED LANDSCAPE IN THE
GAMO HIGHLANDS
OF ETHIOPIA**

**BY DESALEGN DESISSA
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Sacred Ecology 1

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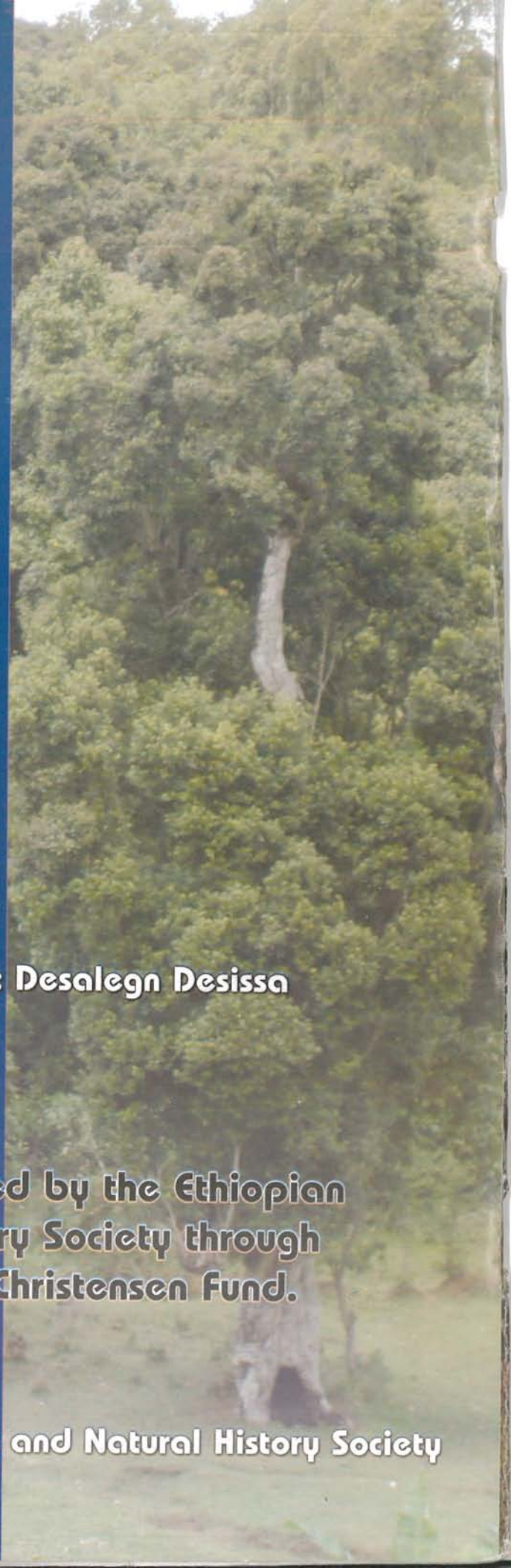
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ADDIS ABABA, ETHIOPIA

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INTRODUCTION

Traditional sacred landscapes are found throughout the world. In Africa, as elsewhere, people sustain intimate spiritual relationships with the natural world in which they live. This spiritual link is illustrated most graphically by the presence of sacred landscape in the lived-in landscape of indigenous communities. Many communities have sacred landscape where they worship spirits of nature and forests; where they make sacrifice and cultural festivals. These places are revered; in some cases they may not be touched and destroyed. An example of this is a piece of land with or without forest, mountain, rocks, rivers and lakes set aside as sacred and accorded strict protection under customary laws. In the Gamo highlands of southern Ethiopia, each community has its own sacred landscape. They are natural areas of cultural and spiritual importance for the people. For the Gamo communities sacred landscapes are everything. They provide the venue for many cultural events. People gather near, under or on the sacred landscape to discuss matters related to communities or individuals; at these sites people also perform ritual purifications, as well as other cultural ceremonies and thanks giving festivals related to marriage, the birth of children and the provision of health and wealth.

In the Gamo highlands sacred landscape also serve a critical environmental role in protecting the landscape from degradation. The sacred landscapes are places where many plant species survive in their place of origin. As a result, these sites are respected and protected through customary laws that make ecological sense. Custodians of the sites, often in collaboration with a traditional leader such as a head of a family or *adento*, lineage head or *korafnae*, community leader or *halaqa/huduga*, reinforce the rules. Although there are many cases of continued respect for such traditional values and management, there are many more cases in which societal changes and outside pressure have undermined traditional practices. The interlinked cultural and biological relationships found in the Gamo highlands are under threat. The delicate and balanced relationships between humans and their environments that have been built up over many years are now faced with the possibility of rapid and irreversible destruction.

Main goal

To work with the guardians and communities of the Gamo highlands in order to protect and sustain the cultural and biological diversity of their living indigenous sacred landscapes.

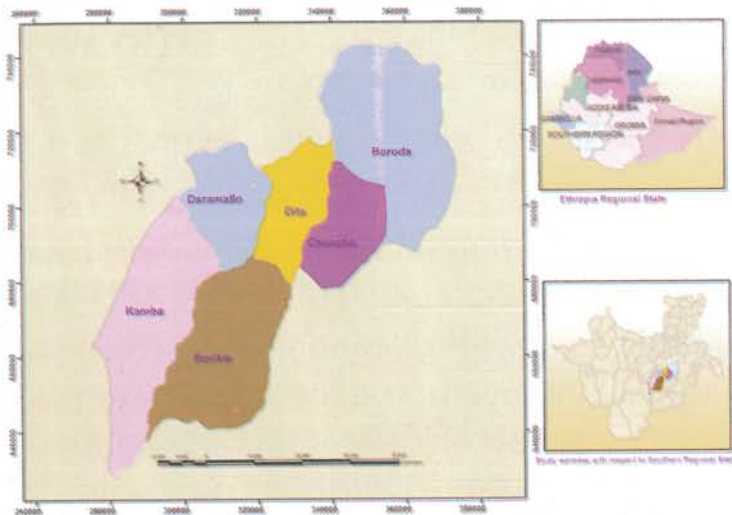
Purpose

To create models for the preservation of culture and the conservation of biodiversity. We focus on close collaboration with the guardians of sacred landscape, government representatives and the community at large. Our research is based on the identification of different sacred landscape, their associated indigenous culture, religion, biodiversity and the threats they face.

METHODOLOGY

Site description

GEOGRAPHICAL LOCATION



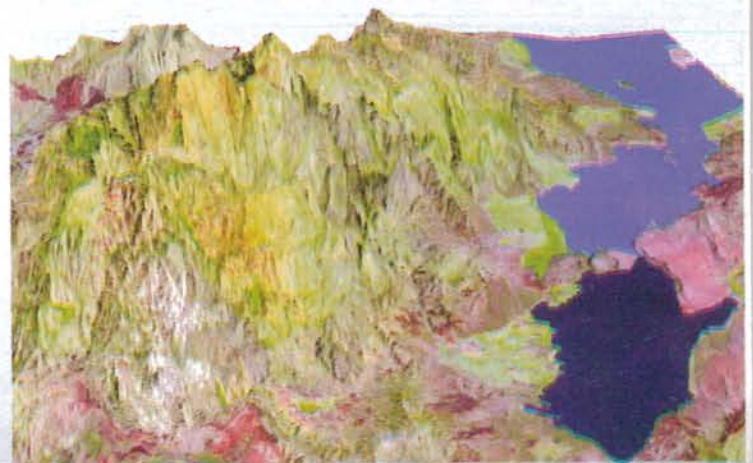
Location map of the study area

The Gamo Highlands are located in the Southern Nations Nationalities and Peoples Regional State (SNNPRS) in the Gamo Gofa zone of southern Ethiopia. They lie between $5^{\circ} 49' 12.41''$ and $6^{\circ} 26' 55.54''$ N and $37^{\circ} 04' 42.66''$ and $37^{\circ} 38' 25.43''$ E. The highlands cover an area of 3,107 sq. km and account for 41% of the total geographical area (7, 572 sq.km) of the Gamo territory. The highlands are divided into the following Weredas or administrative units: Chencha, Dita, Bonkie, Kamba, Boroda and Daramallo. The Gamo highlands form a band of terrain running roughly south-north between Maze flat lowland to the southwest and the Abaya and Chamo lowlands to the north-east. The Highlands are

bordered by Kucha and Humbo weredas on the north, Zalla wereda on the southwest and on the south by Derashie especial wereda. The Gamo highlands measure about 97 km from south west to north east and about 38 km from east to west.

PHYSICAL FEATURES

The topography of the Gamo highlands is characterized by rugged mountain chains, high plateaus, undulating terrain and steep slopes. The highlands rise up from the western parts of lakes Abaya and Chamo at an altitude of 1200 m. The highest peak is the Guge Mountain in the west of the highlands where it reaches up to a height of 3500 m above sea level.



3D view of Gamo Highland from satellite image

GEOLOGY

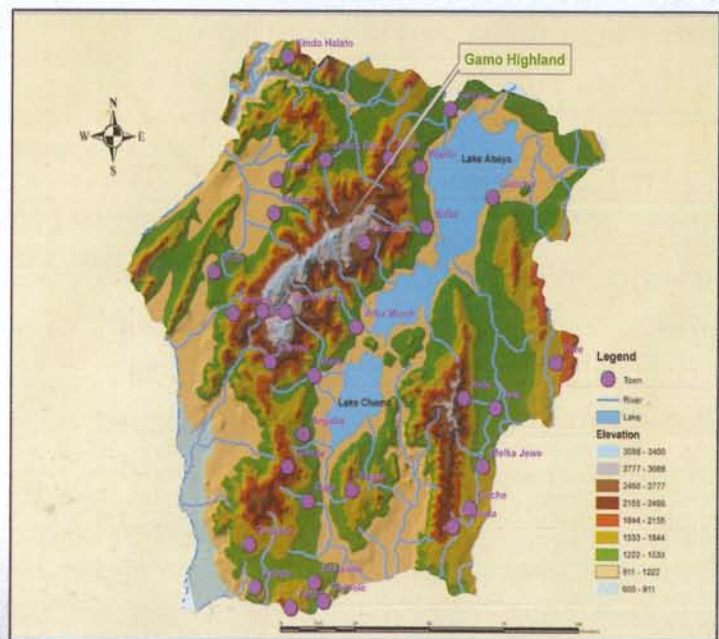
The geology of the area is part of the Ethiopian southwestern plateau. It is characterized by old crystalline rocks including granite, and diorite. Mountains, ridges and hills are mainly formed from these rock properties in the area. The elevated landscape is made of highly fractured old crystalline rocks which make it a groundwater recharge area; on the other hand the lowland areas form groundwater discharge areas.

CLIMATE

The climate is characterized by a bimodal rainfall pattern with the main rainy season between June and September and a short rain period from February to April. The Gamo highlands receive their rainfall from the southwest monsoon, its maximum intensity being in the months of July and August. The average annual rainfall ranges from 500 mm in the lowlands to 1200 mm at the highest elevations. The temperature varies between 10°C to 25°C.

DRAINAGE SYSTEM

The highlands are endowed with several large perennial streams. The rivers Maze, Domba, Zage and Sago are the important drainage lines of the Gamo highlands draining into the Maze lowlands in the west and south west while the rivers Kulfo, Sille, Basso, Hare and Shafe are those draining into the Abaya and Chamo lakes in the east and north east and Halilo and Adoshobaye to the Segen lowlands. In general the highlands are drained east to west to the Omo River and from west to east to the Abaya and Chamo/bilate basin and from north to southwest to the Segen lowlands. Neighboring steep escarpments from Kamba, Dita, Chench, Daramalo and Bonkie districts with higher rainfall represent the catchments for many of these water courses. The lowland populations are reliant on water generated by rivers and streams flowing from the mountains of the Gamo highlands.



Drainage system of Gamo Highland

WETLAND

The highlands are rich in wetland resources in the form of creeks, swamps and marshes. These are important to the inhabitants of the highlands because they provide sedges, water and grazing sites. They also act as a source from where water may be drawn, and ground water replenished.

WILDLIFE

The Gamo highlands like all other highlands in Ethiopia have seen a rapid decline in the number of wild animals. This is due to habitat destruction for agricultural purposes and the destruction of natural vegetation by overgrazing and overexploitation. Among the existing wild animals of the Gamo highlands are: Hyena, Jackal, Mongoose, Porcupine, Klipspringer, Aardvark, Colobous and Vervet monkeys, and Ba



Thick-billed Raven

boons. Furthermore, the Gamo highlands have a rich and varied *avifauna*. Some endemic birds include: Wattled Ibis, Banded Barbet, Abyssinian catbird and the Thick-billed Raven.

ECOSYSTEM DIVERSITY

The Gamo highlands represent different ecosystems and ranges from sub afroalpine grassland on the high mountains of Guge (with altitude of 3500 m) to variations of evergreen dry and moist montane forests from the mountain foot to mountain land

scape. However, due to habitat destruction the forests are now restricted to the sacred landscape that are isolated on top of hills as well as along various waterways.



Afro alpine Grassland on Guge Mt.

Afro Alpine and sub afro alpine grassland

Afro Alpine and sub afro alpine grassland habitats such as meadows and high plateau grassland are found above 3200 m. These places are used as communal grazing lands for people living on the slopes surrounding the plateau.

Bamboo forest



Bamboo forest along the slope of Guge Mt.

In the Gamo Highlands (highland bamboo) grows above 2700 m and reaches 3200 m above sea level. It is found both as natural stands and in cultivation.

Dry Evergreen afromontane forests

Dry evergreen afromontane forest patches (1900-3200 m asl) are found in the southeast and northern section of the highlands in Bonkie, Dita, Daramallo, Boroda and Chencha weredas. Once common, the dry evergreen forests have now been significantly reduced and exist in patches as sacred forests in between villages, along hill slopes, river banks and valleys. Among the species that dominate the top canopy are: *Syzygium guineense*, *Hagenia abyssinica*, *Ilex mitis*, *Maytenus addat*, *Prunus africana*, *Bersama abyssinica*, *Myrica salicifolia*, *Dombeya torrida*, *Pittosporum viridiflorum*, *Allophylus abyssinicus*, *Nuxia congesta*, and *Apodytes dimidiata*.



Gezha dry evergreen afromontane forest

Moist evergreen afromontane forests

Moist evergreen afromontane forests (2000-3200 m asl) are found in the north eastern section of the highlands in Kamba wereda, but are highly fragmented, reduced in size and density due to agricultural expansion. The dominant species are: *Olea capensis*, *Schefflera abyssinica*, *Pouteria adolfi-friedericij*, *Polyscias fulva* and *Syzygium guineense* subsp afromontanum.



Gole moist evergreen forest in Kamba

Evergreen scrubland and mixed woodland

The slope of the mountains ranging from 1500-2000 m asl are covered by evergreen scrub of *Dodonea angustifolia*, *Rhus vulgaris*, *Rhus natalensis*, *Euclea schimperii*, *Carrisa spinarum* and *Harrisonia abyssinica*. Mixed woodlands at the bottom (< 1500 m) of the mountains comprise species of *Combretum* sp, *Commiphora*, *Terminalia*, *Acacia*, *Syzygium* and *Ficus*.

PEOPLE



Indigenous Gamo house

The mountain is also home to over 800,000 people from more than 40 clans. The communities are characterized by complex dialects within the groups and distinctive socio-economic systems that reflect the mountain biological complexity. However, they share a similar system of belief. The main ethnic group living in the highlands is the Gamo who occupy most of the highlands. The Gamo people are the original montagnared agriculturalist community who lived in this mountainous land. The predominant occupation of these mountaineers is subsistence farming and animalrearing. A large variety of crops are cultivated in the highlands. Among the major food crops are cereals



Gamo home garden in Highland

(wheat, barley, tef, sorghum, maize, millet), root crops (potato, sweet potato, Oromo dinich, (Oromo potato) cassava, taro, tannia, yams and Arsaema), pulses (peas, beans, chick-peas, lentils), pseudo stem (enset), oil crops (niger seed) and fruit trees (avocado, mango, orange, banana, lemon, pineapple), spice (onion, garlic, coriander, ginger, rue, basil, and pepper) and a variety of vegetables like species of *Brassica*. These crops are either singly grown in small parcel or intercropped. Most of the household income is also supplemented by weaving.

Indigenous Conservation activities

The lives of the peoples of the highlands have long been tied to their land. Their whole culture is linked to their environment. Since they have lived on these mountainous lands for centuries, they have established socially well structured systems which tend to ensure a balance between people and natural resources. Their traditional activities depend on a harmonious relationship with the local environment, which frequently contributes to minimizing environmental disruption and thereby maintaining an overall ecological equilibrium. Examples of such age-old activities include: making contours on slopes to control erosion, planting hedgerows, protecting sacred forests and using traditional compost made from manure, leaf litter and nurture crops.

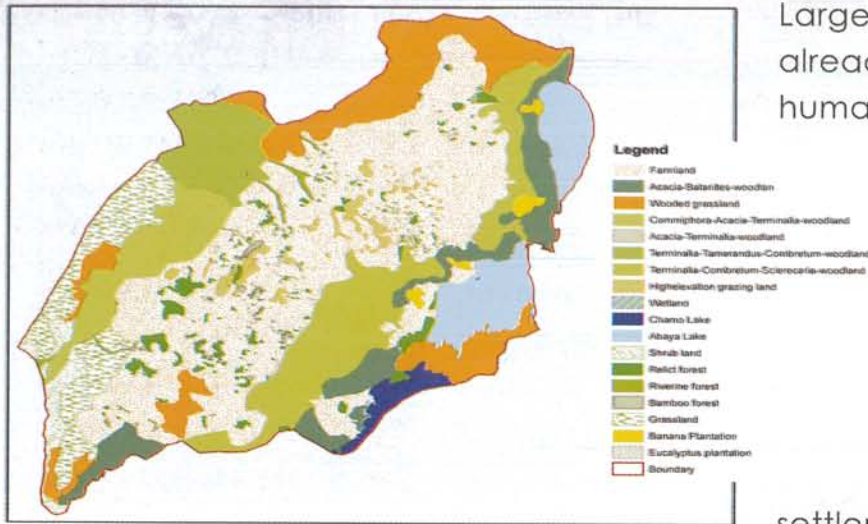


Gamo homegarden in lowland



Contours to control erosion

LAND USE/LAND COVER TYPES



Gamo highlands land cover types

TM satellite image from July 2000) analyses the total land use pattern for the highlands was produced. Analyses of the image (fig 15) shows that cultivated lands occupy 91% of the total area (3,107 sq km), forest lands 1%, grazing lands 2% and rocky and inaccessible slopes, 6%. Each Gamo community has a resource area which usually includes a series of zones: agricultural land on flat areas in upper slopes and at the foot of valleys; mixed-use land including woodlots with indigenous species; hedgerows; sub-afro alpine and afro alpine grazing land.

DATA COMPILATION

Data were collected in two phases. Phase one involved structured questionnaires and semi-structured interviews for local research partners. In each wereda a preliminary survey was carried out to locate the more knowledgeable people and to identify important religious leaders in order to ascertain their attitudes to the veneration of sacred landscape. Four research partners were also chosen based on their knowledge of common/local traditions and/or religious status. The age of the local research partners range between 40–75 years. The interviewees were asked about the types of sacred landscape and about the customs and

Large areas of the highlands have already been converted into human settlements and agricultural plots. The lowland plains, gentle slopes, valleys and parts of the ridges are occupied by traditional huts and these exist either singly or in clusters forming village-land control and management areas are defined by settlement location and local terrain features. From image (Landsat

traditions performed at the sacred landscape. Participant observation was a central method, and was combined with in-depth interviews and informal discussions with individuals and groups. Phase two of the research involved an exhaustive sacred landscape survey and ecological work. In all weredas exhaustive reconnaissance surveys were made and GPS readings were taken at each sacred site. Floristic composition and ecological work of sacred relict and burial forests was carried out to determine vegetation composition, species diversity, rarity and endemism. This was compared with non sacred community forests.

The sacred landscape and religion in Gamo Highlands

The Gamo people are indigenous highland agriculturalist communities with genetic links to their land. They view the landscape as the transfigured flesh of their ancestors. Their spiritual perspective is intimately bound to the family relationships with the land.

For the Gamo people the entire highlands landscape and its resources

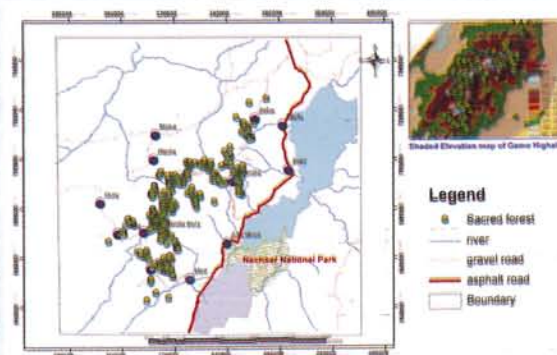
are sacred and deserve utmost respect. In particular, sacred landscapes are places recognized as possessing special spiritual, symbolic and religious significance. They followed an ancestral practice of traditional religion with the central focus being on a communion with forest patches and other sacred land features that they regard as sacred abodes of God.

In analyses of traditional Gamo sacred landscape, EWNHS notes that there are 12 major traditional sacred locations:

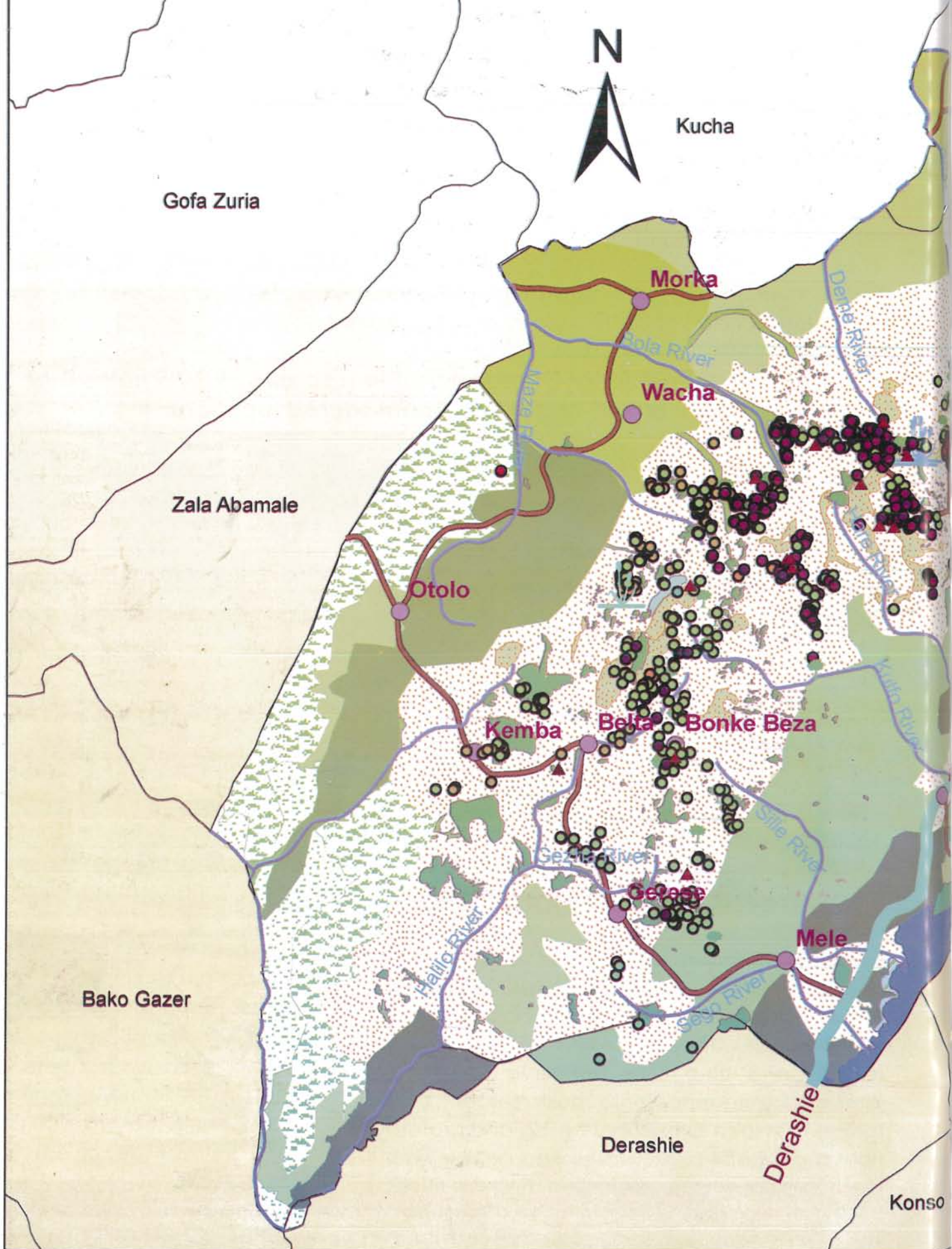
Types	Local name	Chencha	Dita	Bonkie	Boroda	Darama llo	Kamba	Total
Sacred natural forest	Kashaa/duffoo/bosaa	47	62	122	19	14	6	270
Sacred Assembly place	Dubushaa	18	44	39	6	39	9	155
Sacred mountain	Boncho Zummaa	3	8	7	-	1	1	20
Sacred river	Boncho shafaa/Shoree	12	9	10	-	-	1	32
Sacred Pasture land	Kalloo	16	14	-	7	2	-	39
Sacred stone	Boncho Shuchaa/wogga zallaa	1	6	2	3	1	2	15
Sacred Path	Bonchetida Ogee	2	-	-	-	-	-	2
Sacred single tree	Bonchetida Mitha	14	5	18	3	5	2	47
Sacred place for lamentation	Balee	5	16	26	-	-	1	48
Sacred cave	Bonchetida Gongollo	-	-	-	2	1	-	3
Sacred pond	Bonchetida Tilee	4	2	-	-	1	-	7
Sacred spring	Bonchetida Fultoo	2	1	3	-	1	-	7
Total		124	167	227	40	65	22	645

SACRED RELICT FORESTS (KASHSHA)

Sacred relict forests are remnant forests distributed all over the highlands located along the slope, on hill tops, and near habitation between villages. They house the most important religious and ritual relics and serve as cultural symbols linking people to past, present and future. They also symbolize healing and protection, a peaceful place that linked people with God. The forests were protected, and sacrifices and gifts were given to them. Each forest has its own ritual leader known as *eqaa*. The ritual leader (*eqaa*) performs special rituals in or near these forests. The process of performing rituals in the forest by *eqaa* is known locally as *eqanaa*.



Distribution map of sacred forests



Gofa Zuria

Kucha

Morka

Wacha

Zala Abamale

Otololo

Kemba

Belta

Bonke Beza

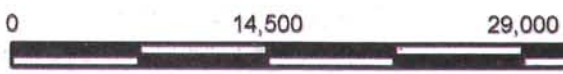
Geze

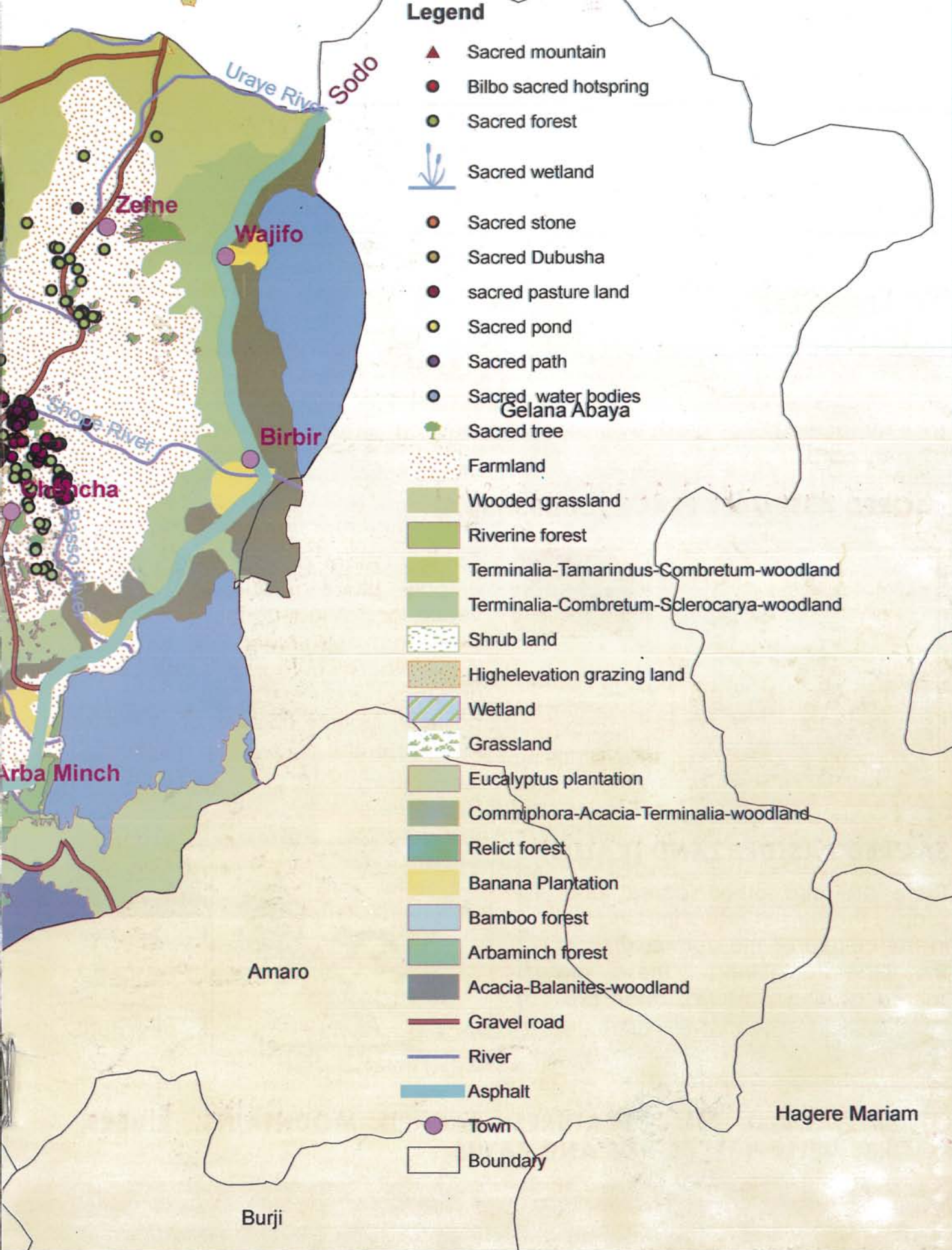
Mele

Bako Gazer

Derashie

Konso





SACRED BURIAL FORESTS (BOSSA/DUFO)

Burial forests are the site of ancestral burials or places where people can commune with their ancestors. Each clan has its own burial forest and these are usually located near human habitations. They acquire their importance from the fact that the ancestor's graves are clustered in them and sheltered by trees which by being on sacred ground are inadvertently conserved.

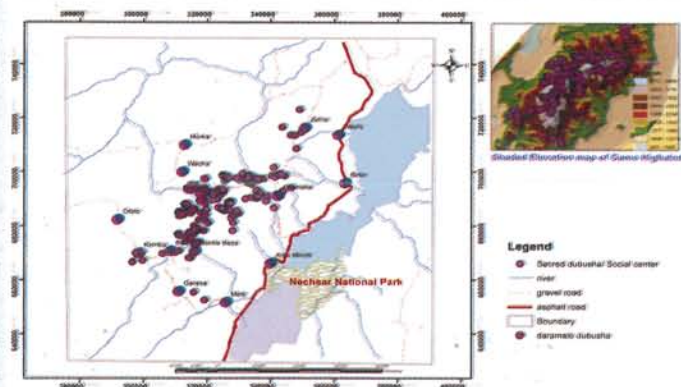


Sacred burial forest

SACRED BALEE

Sacred burial forests contain a field of grassland on one side of the forest known as Balee. Balee has socio-cultural functions which include a place for lamentation and other funeral-related activities. In terms of conservation, these are used as a buffer zone for sacred burial forests by protecting them from grazing and vegetation-trampling by cattle.

SACRED ASSEMBLY PLACE (DUBUSHSHA)

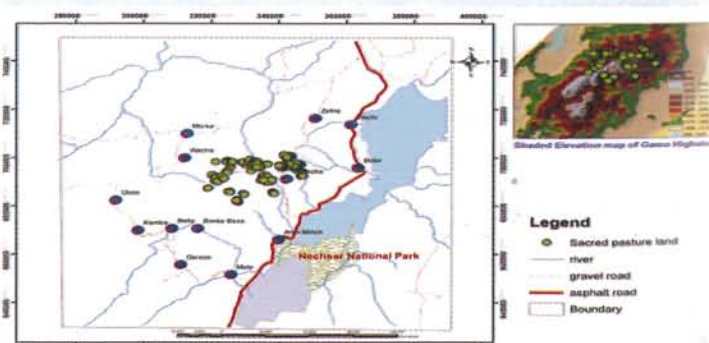


Distribution map of sacred assembly place

For the Gamo people a sacred assembly place (*dubushsha*) is the venue for political conferences, social gatherings and ritual performances. It is the place where elders sit and talk until they agree. It is the location where political, judicial and social decisions are made. It is also a place where installation of traditional leadership takes place.

SACRED PASTURE LAND (KALLO)

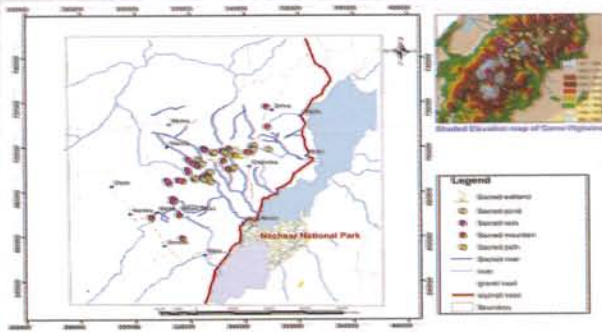
There are also other sacred landscapes that are of equal importance in the culture of the communities of the Gamo highlands. These are sacred grazing pastures, often predominantly grassland ecosystem, are found in Dita, Chencha and Bonkie districts. They are called kalloo.



Distribution map of sacred pasture land

OTHER SACRED LAND FEATURES: SACRED MOUNTAINS, RIVERS, ROCKS, WETLANDS, PONDS AND PATHS

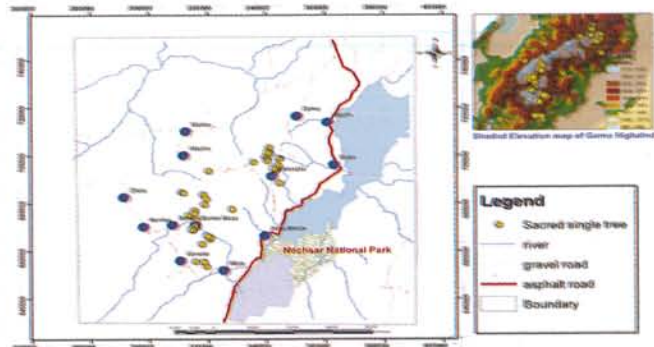
Mountains are important in Gamo religion as a place where *maakos* people can commune with God. Parts of streams, rivers, rocks wetlands, and ponds are protected because of their religious significance. In these sacred places, people fulfill their



Distribution map of other sacred land features

SACRED SINGLE TREES

There are many sacred trees throughout the Gamo highlands landscape. They are usually big trees surrounded by different shrub species locally known as *Bonchitida mithsa*. Several sacred single trees are mostly 'owned' privately by a family or a group of families. Under these sacred trees, annual religious rituals are performed. These rituals are performed for the well-being of the family and the community.



Distribution map of sacred tree

SACRED HOT SPRING



Sacred hot spring

In the lower slopes of the Gamo highlands, there is a sacred hot spring known as *bilboo* that is said to have curative powers. People from different parts of the region outside the highlands go there to cure themselves. Every year



Sacred hot spring

coffee, hand woven rings, coffee pots and coins are offered to this place as a thanks-giving subsequent to the harvest and following relief from disease.

SACRED OBJECTS

There are sacred objects that are revered by the Gamo people and which are kept in their houses. Many of these objects are inherited and are associated with events in the life history of the people. They include metal rings, pots, knives, machetes and weapons. These sacred objects symbolize the lives and relationships of the ancestors who once owned them. They are stored in attics and only brought down for ceremonial purposes.



Sacred objects hung on the roof

Indigenous Governance of Sacred Landscape

Protection of sacred landscape in the Gamo highlands is through traditional institutions. Traditional institutions for the protection of sacred landscape may be classified into three categories: 1: Gomee (avoidance), 2: Religious/spiritual and 3: Traditional political-institutions

Gomee (avoidance): The Gamo believe that gomee involves the avoidance of lying, stealing, boundary trespassing, tree-cutting in the sacred forest, digging-up sacred places, abusing women and causing social embarrassment. Thus, Gomee regulates people's activities. The use of sacred landscape is governed by gomee. Gomees governing the sacred forest include the prohibition of:

- all forms of use, including farming, hunting and collection of any plant material;
- access, except to traditional authorities such as Makaa, Eqaa and Halaqaa for the performance of customary rites;

Religious/Spiritual: The sacred landscapes have not been demarcated. There are no written rules, and they have no legal basis. But they survived because of the strong traditional beliefs upheld by the local people and the spiritual, religious and cultural attach

ments to sites. Sacred landscapes are associated with God and the ancestors. The felling of any single tree from a sacred forest or the digging-up of sacred places is met with strong disapproval and retribution. Retribution may manifest through diseases, or misfortune to the individuals and their families.

Traditional political institutions:

Sacred landscapes are also protected by the traditional authorities. These are normally elders who are knowledgeable about traditional culture. They include kawo (king), halaqa (chief), korafnae (clan head), adento (family head) Makaa and eqaa (religious leaders). They lead and direct various traditional activities in the Gamo communities. They set rules and regulations which are observed in the daily life of the people. For example, they are also responsible for organizing ceremonies or punishing through warnings or fines, those who go against village norms.

IMPORTANCE OF SACRED LANDSCAPE

For festivals and learning



Festivals and sacrifice in the Gamo highlands symbolize people's cultural, social and religious aspiration for a fuller and better life. Festivals like *maskala* and *sofee* are the most notable festivals in the Gamo highlands. *Sofee* is part of the festival of the Gamo New Year.



For socializing

Gamo political relations are regulated and enforced by supernatural sanctions. One example of an accepted norm is avoiding disputes between individuals and community members. Every Gamo village has a homestead headman, lineage head and chief who together form a community council to settle disputes. Dulata is the process of reconciliation between families or communities, especially when serious quarrels arise. In the villages of the Gamo highlands there are special places known locally as sacred dubusha where councils sit to try to resolve any



Halaga listening to the case

communi ties, especially when serious quarrels arise. In the villages of the Gamo highlands there are special places known locally as sacred dubusha where councils sit to try to resolve any community problem. These centers are sacred and disputants are therefore discouraged from bringing false cases. The identification of wrong-doers also takes place at these centers. If a person who has committed theft or murder is not identified, there will be a public gathering to uncover the wrong-doer by the ritual of making the suspected criminal jump over a sacred spear lying on the ground. These places are also a center for ceremony, a center for the investiture of chiefs and a place for thanksgiving festivals that symbolically link people with their ancestors.



Ceremonies for the investiture of Halaga

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Cultural and symbolic importance

The variety of cultural values and symbolic functions ascribed to the sacred landscape are as numerous and diverse as the communities and cultures in the highlands. For the Gamo, sacred landscape feature in all aspects of culture: language, history, art, religion, medicine, politics and social structure. For example, sacredlandscapes signify a link to culture and beliefs. They symbolize links between the spiritual world of the ancestors and the earthly world of people. For example, sacred forests are not considered as a mere collection of trees; instead, they are believed to be the gray hairs of Gamo elders. Therefore, they are a paternal symbol; a protector of the communities against misfortunes.

Indigenous Religion

Gamo sacred landscapes house the spirit of ancestors and God and provide a place for religious and healing ceremonies and for socially binding promises. All of these ceremonies and promises are conducted through various ritual performances.

<p>RITUALS FOR PURIFICATION</p> <p>People make rituals at community meeting places in order to rid themselves of all the sins that were accumulated during the past year.</p>
<p>RITUALS FOR HARVEST</p> <p>The ritual for harvest is performed by harvest offerings of crops. Another ritual for harvest is performed every seven years. This ritual involves the cutting of bamboo for use under the supervision of woyesha eqaa (bamboo priest) in Daramallo. The ritual ends after executing the first tree cut made by eqaa.</p>
<p>RAIN MAKING AND RAIN STOPPING RITUALS</p> <p>Rainmaking and rain stopping rituals are performed at sacred landscape in years when the monsoon is late and when the dry season is long and when the monsoon rains are unusually longer than the normal rainy season.</p>
<p>THANKS GIVING RITUALS</p> <p>This is the main ritual performed during the end-of-the year offerings. This ritual celebrates their social and agricultural regeneration whilst at the same time enabling them to welcome the New Year.</p>

Ritual calendar

These diverse rituals are transformative rituals performed and observed in accordance to a calendar.

Ritual	Months of ritual											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Thanks giving ritual												
Crop sowing ritual												
Harvesting ritual												
Rainmaking ritual												
Inauguration of new kallonattaa												
Rain stopping ritual												
Hatshayfe (Ensete harvesting ritual)												
Ritual for purification												
Ritual at the end of crop sowing												
New Year ritual (Daramallo) on the full moon of the month												

Source of Ritual plants

Sacred forest plants are used in many cultural ceremonies such as birth and circumcision, funeral ceremonies, the initiation and inauguration of chiefs and for the ritual purification of everyday objects. For example, people are forbidden to take home



Ranunculus-the ritual plant

grave-digging hoes that have not been purified. *Ranunculus multifidus* and *Commelia sp* are ritual plants usually used by the Gamo to purify materials. Branches of *Vernonia amygdalina* are carried by chiefs as an indicator of chieftainship in *Daramallo*. *Discopodium penninervum* is used to purify two individuals in disputes so that their differences are resolved. The use of aerial parts of Bamboo is very common in the Gamo highlands as part of the fulfilling of daily rituals. They put

bamboo stems in houses as a holy plant for a year until it is replaced with a new one. Tobacco is regarded as an important symbol of welcome and hospitality; symbolizes friendship and features in all festive occasions.

Biodiversity Conservation

Sacred forests in the Gamo highlands are patches of forests in an intensively cultivated landscape. In size they range from 0.5 to 25 hectares. Although they cover a small proportion of the total area of the highlands, they form an integral part of the highlands landscape. This informal network of sacred forest reserves plays an important role in maintaining biodiversity.



Example of sacred relict forest rich in species

SPECIES DIVERSITY

There are about 272 sacred forests distributed all over the Gamo highlands. Species richness varies from 20-107 species per forest. A total of 792 plant species belonging to 148 families have been recorded. For the purpose of comparison 7 sacred forests and 7 non sacred forests were selected for detailed vegetation assessment. A total of 2.24 ha plot was sampled in each selected sacred and non-sacred forest. Com

parisons showed that sacred forests shelter a higher diversity of plant species and exhibit more vigorous regeneration of trees than non-sacred forests. The forest plot of the non sacred and the sacred forests shared a species similarity index of 63%, suggesting that the sacred forest contributed to the conservation of afro-montane forest biodiversity. Some of the species were absent in the non sacred forests, thereby suggesting that sacred forests served as a refuge for some species.

Sacred forests shelter more of the threatened species. These include: *Hagenia abyssinica*, *Cordia africana*, *Juniperus procera* and *Podocarpus falcatus*. Some plant species that are new to the Gamo highlands were also recorded in the sacred forests. These include *Pouteria adolfi-friedericii*, *Olea capensis*, *Ocotea kenyensis*, and *Epipactis* sp. Comparisons were also made between sacred forests of different patch sizes and the analysis indicated that of sacred forest patches with a decrease in patch size, there was no significant decline in biodiversity.

ENDEMICISM

These forests are of national and global importance because they contain exceptionally high levels of endemic species (for example in plot survey covers, 2.24 ha contained 153 species of which up to 19 species are endemic to Ethiopia).

No	Species	Family	No	Species	Family
1	<i>Acanthus sennii</i>	Acanthaceae	11	<i>Vepris dainellii</i>	Rutaceae
2	<i>Kniphofia foliosa</i>	Asphodelaceae	12	<i>Pentas caffensis</i>	Rubiaceae
3	<i>Erythrina brucei</i>	Fabaceae	13	<i>Spermania macrocarpa</i>	Malvaceae
4	<i>Mayetenus addat</i>	Celastraceae	14	<i>Vernonia leopoldi</i>	Asteraceae
5	<i>Millettia ferruginea</i>	Fabaceae	15	<i>Lippia adoensis</i>	Lamiaceae
6	<i>Acacia abyssinica</i>	Fabaceae	16	<i>Bothriocline schimperi</i>	Asteraceae
7	<i>Crotalaria roseni</i>	Fabaceae	17	<i>Vernonia rueppellii</i>	Asteraceae
8	<i>Plectocephalus varians</i>	Lamiaceae	18	<i>Justicia diclipteroides</i>	Asteraceae
9	<i>Solanecio gigas</i>	Asteraceae	19	<i>Phyllanthus mooney</i>	Euphorbiaceae
10	<i>Urtica simensis</i>	Urticaceae			

Ensuring environmental sustainability

Sacred forests help to conserve critical ecosystems and threatened species. They also maintain essential ecosystem attributes such as the generation of gene pools and the provision of water security. The sacred forests in the mountains are important sources of water for the mountaineers and for those living in the lowlands surrounding the mountain. Furthermore, the way their lives and cultural practices are regulated ensures environmental sustainability as can be seen in forests that maintain and conserve the water shade of the area.

Sustaining cultural diversity

Sacred landscapes are conserved for religious and spiritual purposes. Bossa/duffo are patches of forests where the clan members are buried. They are protected out of respect for the dead. Kashsha are patches of natural forests preserved for religious purposes. Indirectly, but effectively, sacred landscapes become a tool for the protection of cultural diversity. In keeping out destructive external forces of land use or in providing a forum for cultural assertion, they help to protect sacred language, traditions, knowledge and practices that may otherwise be threatened; they may even help to revive pride in local cultures which are otherwise beginning to be considered 'primitive' and 'outmoded' not only by outsiders, but also by some members of the community.

THREATS AND SUCCESSES

Threats

The sacred landscape and the unique cultural and biological diversity associated with them in the Gamo highlands are under threat. These highlands face danger today that may destroy what has been built up over centuries. Critical threats to the people's culture and to the biodiversity of the sacred landscape include:

INTRODUCTION OF PROSELYTZING RELIGION

The introduction of new religion to the Gamo highlands poses a distinct threat to sacred landscape and their custodians. The advent of Christianity in these districts has weakened the traditional beliefs and ritualistic practices of the communities. Because of a general lack of recognition at the national and local level of the value of sacred landscapes, the various Christian religions continue to be imposed on custodians, thereby undermining their religion. Even more alarmingly, many sacred landscapes have suffered through the undermining of traditional institutions by local administration. This has resulted

in the erection of an Orthodox Church in the traditional sacred landscape and burial grounds.



New Orthodox Church with grass roof in the indigenous sacred forest

PRESSURE FROM CONVERTED FAMILY OR RELATIVES

The followers of traditional beliefs especially *Eqaa* and *Maako* (traditional religious leaders) are not only faced with a confusing and inconsistent approach by the Christians towards their traditions, but they are also under great pressure to convert, from relatives or friends who have become Christians. In the face of this new pressure, some traditional religious leaders have tried to combine their traditional beliefs with some aspects of the new religions.

ENCROACHMENT

Different religious groups have started encroaching on the sacred groves and sacred pasturelands in order to use them for farming. As a result, sacred places are losing their cultural importance to the younger generations.



Encroached Sacred forest in Boroda

TREE CUTTING



Trees cut down in sacred

erling and the creation of new footpaths.

The sacred forests are undergoing changes from human activities that were previously forbidden; changes such as cutting live trees, biomass gathering and the creation of new footpaths.

OVERGRAZING

Another threat to sacred forests is overgrazing. The status of these sacred forests was ascertained through general observation. Most sacred forests surveyed were disturbed mainly by grazing and vegetation trampling by cattle. Seedlings and saplings under the mother trees were rare because of overgrazing. The sacred forests are being degraded, and at the same time so too are various aspects of the traditional religious practices.

KEY SUCCESSES

In order to minimize the threats faced by the sacred forests of the Gamo highlands, different mechanisms need to be designed. To this effect, EWNHS has been undertaking awareness creation workshops and seminars to make people aware of the importance of sacred landscapes.

ESTABLISHMENT OF THE GAMO GOFA SACRED LANDSCAPE ASSOCIATION

EWNHS maintains that local knowledge and appreciation for sacred landscape is desired by local groups. The EWNHS has spearheaded the formation of Friends of Gamo Gofa Sacred landscape Association who are committed to sacred site protection. This Association is a local based sacred landscape protection Association that has been in operation since January 2007. It was established to help custodians of sacred landscape to protect sacred landscape, their associated religion, culture and their biodiversity. The Association was established after organizing a workshop in Arba Minch. During the workshop, a paper on sacred landscape, their importance in culture and biodiversity conservation and current threat' was presented to participants. 58 participants including the custodians of the sacred landscape, the administrative bodies from different institutions (Regional, Zonal, Wereda and Kebele) participated in the workshop and discussions were held on designing possible mechanisms to minimizing the threats. The establishment of the Association to help custodians by giving them a stake in sacred site conservation was one of the solutions raised by participants during the workshop. The Association was established and is now legally recognized by the Regional Ministry of Justice.

EWNHS supported the 'Friends of Gamo Gofa Sacred Site Association', which was established during the first workshop, to organize the second awareness creation workshop held in Arba minch on August 6, 2007. Four papers were presented at the second workshop favoring the contribution of sacred landscape for biodiversity conservation, the role of culture for natural resource conservation and the legal rights of people to develop their culture.



Participants during the workshop

GROWING INDIGENOUS TREE SPECIES



Farmers weeding in their nursery

Farmers established their own nurseries in Dita, Chencha and Boroda Weredas. Seeds of locally threatened species were collected from the existing forests and distributed to farmers. These included *Hagenia abyssinica* (kosoo), *Prunus africana*



Kosoo seedling at community woodlot

(*Onsaa*), *Cordia africana*, *Croton macrostachyus* (*Anaka*), *Olea europaea subsp. cuspidata*, and *Erythrina brucei* (*Borto*).

The custodians of the sacred forests in chencha/ezo preferred to establish a wood lot in the vicinity of the sacred forests so as to reduce the relative isolation of the sacred forests.

SUPPORT FOR CALENDRIAL RITUALS



Religious leaders sitting in front as is customary

from elders and religious leaders as is customary. This event allowed people to feel religious freedom of worship. Perhaps the most touching comment in response to the festival came from a man when he said "thank you for helping us to get back some of the most important parts of our culture"

Calendrical rituals in chench and dita were supported by providing sacrificial animals. At the festivals many local folk musicians played to an audience of about 600, mostly Gamo people who arrived on foot from distant rural areas. During these ritual festivals, religion was coming out into the open after 30 years of suppression. The ritual celebration was held at dorbo and zadha domestic dubusha. It was started by prayer



Participants of ritual ceremony

HIGHER EDUCATION SEMINAR ON THE IMPORTANCE OF SACRED LANDSCAPE

A Seminar on the importance of sacred landscape for culture preservation and biodiversity conservation was held at Arbaminch University. The Project Team leader presented the findings of the study to biology and geography students, instructors and other members of the University. The presentation mainly focused on the Gamo religion, the venues for the religion (sacred landscape) and their importance in culture and biodiversity conservation.



The project leader on giving seminar to University students and staff

REGIONAL ORAL PRESENTATION ON THE IMPORTANCE OF SACRED LANDSCAPE

As one of the activities concerned with awareness creation of sacred landscape, an EWNHS team at Hawassa presented a paper on the importance of sacred landscape and they threats they face. This workshop was organized by the Culture and Art Society of Ethiopia (CASE) in collaboration with the Southern Nations, Nationalities and Peoples Regional State Cultural Bureau. Allowing for networking amongst formal and grass root opinion leaders in a concentrated period, this workshop enabled cross-pollination of ideas and issues and motivated biocultural diversity awareness among decision makers.

DISSEMINATION OF FINDINGS THROUGH THE MEDIA

Four local Press Releases were made during the implementation period.

No	News type	News paper	Media/ News agency	Date	News
1	Press release	Addis Zemen	Walta	20-2-07	"The Importance of sacred forests in biodiversity conservation in the Gamo Highlands". In this piece, the sacred landscape, their importance, and threats were reported
2	Press release	Addis Zemen	Walta	24-5-07	"Planting indigenous trees". In this report the Biocultural diversity Project Coordinator gave details on the status of indigenous trees in the Gamo highlands. He noted that the planting of indigenous trees around sacred landscape is the only way to preserve the indigenous tree species. He also mentioned activities currently underway for the continued existence of indigenous trees. Among the activities are: Supporting custodians of sacred landscape to establish their nursery sites to grow seedlings of rare species; collection of seeds from existing biodiversity and the planting and cultivation of these seeds in sacred grounds and established nursery sites.
3	Press release	Addis Zemen	Walta	12-6-07	"Forests protected in a traditional way in the Gamo highlands saved some plant species from extinction. Presented to Arba minch University students and staff. In this bulletin, the number of sacred landscape in the Gamo highlands was given and the contribution of these sites to culture and biodiversity conservation was emphasized. A photograph of the sacred forest was also printed.
4	Press release	Addis Zemen	Walta	8-12-07	'When culture advocates for nature'

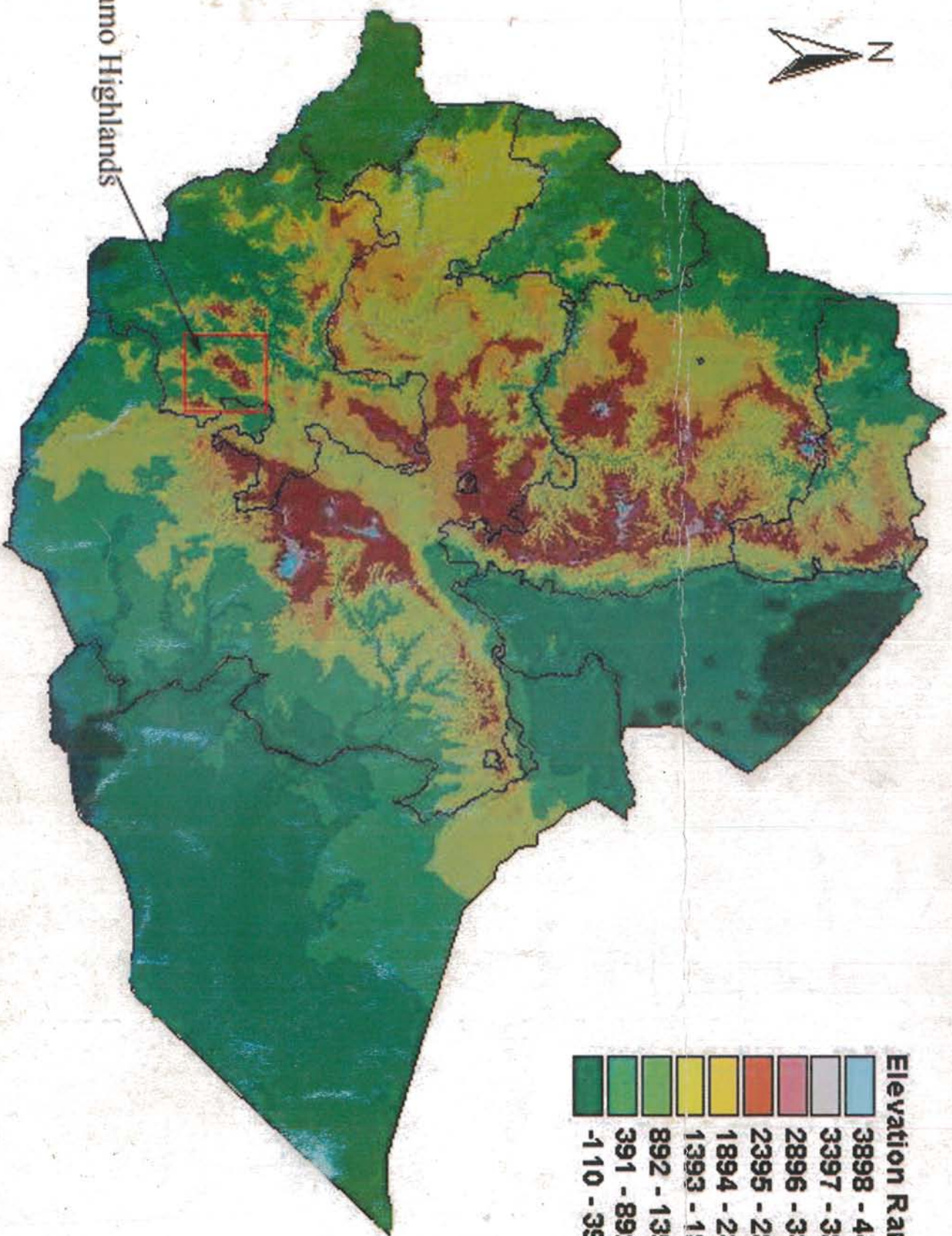
ADDITIONAL READING

1. In-Situ Conservation Practices of the Gamo Highlanders of Southwest Ethiopia, by Daniel M. Cartledge
2. The Management of *Ensete ventricosum* in the Gamo Highlands of Southwest Ethiopia. Culture and Agriculture, by Daniel M. Cartledge
3. Population and Sustainability in the Southwest Highlands of Ethiopia. A paper presented at the 97th Annual Meeting of the American Anthropological Association in Philadelphia, by Daniel M. Cartledge
4. Studying Community Environmental Threats: Anthropological Perspectives on Quality-of-Life Analysis in Environmental Issue Identification and Assessment. A paper presented at the Society for Applied Anthropology Annual Meeting, San Juan, Puerto Rico, by Daniel M. Cartledge.
5. Taming the Mountain: Human Ecology, Indigenous Knowledge, and Sustainable Resource Management in the Doko Gamo Society of Ethiopia, by Daniel M. Cartledge
6. Ensete Farming Systems in the Southwest Highlands of Ethiopia: Their Past, Present, and Future Sustainability. Co-authored with Steven Brandt and Clifton Hiebsch, presented at the African Studies Association Conference, by Daniel M. Cartledge
7. Woman Between Two Worlds: Portrait of an Ethiopian Rural Leader. by Judith Olmstead. *The Journal of the Royal Anthropological Institute*, Vol. 4, No. 3 (Sep., 1998), pp. 599-600
8. Challenging Fatherhood: protestantism, hierarchy and individualism in the Gamo Highlands of southwest Ethiopia. Paper presented to workshop participants at Max Planck Institute for Social Anthropology under by Dena Freeman
9. An Ethnoarchaeological Study of Stone Scrapers among the Gamo People of Southern Ethiopia. By Kathryan Weedman
10. Ethnic Groups, the state and the religious landscape in south western Ethiopia by Wolde Gossa Tadesse





Gamo Highlands



Elevation Range	
3898 - 4400	Lightest blue
3397 - 3898	Light blue
2896 - 3397	Light purple
2395 - 2896	Orange
1894 - 2395	Yellow-orange
1393 - 1894	Yellow
892 - 1393	Light green
391 - 892	Medium green
-110 - 391	Dark green