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Edited by Catherine M. Cameron and Steve A. Tomka

Excerpt

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PART I

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Introduction

# 1 Abandonment and archaeological interpretation

CATHERINE M. CAMERON

Abandonment conjures up images of catastrophe, mass migration, and environmental crisis. Archaeologists are not immune to the “disaster movie” mind set. Most archaeological studies of abandonment have focused on either the regional exodus (the abandonment of the Four Corners Region of the American Southwest at AD 1300) or spectacular cases of rapid abandonment (Pompeii). Since about 1970, abandonment has been increasingly recognized as a normal process of settlement, and, more importantly, identified as a key process in the formation of the archaeological record (e.g. Ascher 1968; Schiffer 1972, 1976, 1985; Stevenson 1982).

Papers in this volume address not simply the causes of abandonment, but the articulation between human behavior at the time of abandonment and resulting patterns in the archaeological record. Combining ethnographic, ethnoarchaeological, and archaeological data from a wide range of geographic areas and time periods, all contributions share the common theme of understanding the effect of abandonment on archaeological patterns. Several papers use data from the North American Southwest where abandonment has been of long-standing interest, while others break new ground in areas as diverse as modern Iran and Copper Age Portugal.

Abandonment can occur at the level of the activity area, structure, settlement, or entire region. All purely archaeological sites have been abandoned, but not all structures or settlements were abandoned in the same way. “Abandonment processes” – those activities that occur during abandonment – include behavior such as curation or caching of tools, dismantling of structures, and the interruption of normal disposal patterns (Schiffer

1987:89–98). The circumstances surrounding abandonment, such as speed, degree of preabandonment planning, or anticipation of return, determine the abandonment processes that occur. Abandonment processes condition the entry of cultural material into the archaeological record; they are the primary focus of this volume.

The importance of abandonment processes to archaeological interpretation can be illustrated by examining assumptions about artifact distributions. Should we assume that artifacts found on room floors were left exactly where they were used? Were they dumped there days or hours before abandonment when normal clean-up processes were relaxed? Were they, instead, cached for later use during an anticipated return? Do they represent trash tossed into an abandoned room years before the settlement was abandoned?

Archaeologists often assume the first, that artifacts found on living surfaces directly represent their original context of use (Schiffer 1985). Not only can serious misinterpretations result if the abandonment processes responsible for the deposition of cultural materials are not identified, but important information on settlement patterns, site use, and abandonment causes may be overlooked. Abandonment is an important stage in the formation of an archaeological site; in order to interpret sites accurately, archaeologists must understand abandonment processes.

## Archaeological study of abandonment

Ascher (1968) was one of the first archaeologists to describe intra-site abandonment of structures and features as part of a normal process of settlement use and to explore its archaeological patterning. In the early 1970s, Schiffer (1972, 1976) differentiated abandonment processes from the normal use of activity areas. Deposition of artifacts through normal processes involves discard or loss; abandonment processes become operative as activity areas are being abandoned. Schiffer linked abandonment to the production of *de facto* refuse, which he defined as usable cultural material (tools, facilities, structures, etc.) left behind when settlements or activity areas are abandoned (1972:160; 1976:33–4; 1987:89). He recognized the effect of *curate behavior* (*sensu* Binford 1977, 1979), the removal of usable items from an abandoned activity area for use elsewhere, in depleting assemblages at abandoned activity areas and sites (Schiffer 1987:89–91).

During the 1970s, research on site formation processes intensified, often using ethnoarchaeological data to project archaeological patterns (e.g. Binford 1977, 1978;

DeBoer and Lathrap 1979; Gould 1980; Yellen 1977). Although a few ethnoarchaeological studies of the effects of abandonment on archaeological patterning appeared (Bonnichsen 1973; Lange and Rydberg 1972; Longacre and Ayres 1969; Robbins 1973), these were often simply cautionary tales in which the disparities between archaeological interpretations and systemic reality were demonstrated.

Baker's (1975) study of artifact caches at a lithic quarry was one of the few that explored the effects of a specific abandonment behavior on archaeological patterns. Murray (1980), in a cross-cultural study of mobile and sedentary societies, emphasized the differential effects of discard and abandonment behavior on artifact deposition.

Stevenson's (1982) study of gold rush sites in the Yukon was the first to explore processes of settlement abandonment systematically. He examined the effect of variables such as speed of abandonment and anticipation of return on patterns of artifacts and structures found at Yukon sites. He discovered that where abandonment was rapid, some structures were left while still under construction; where abandonment was planned and return was anticipated, artifacts might be cached or otherwise prepared for storage. Subsequent investigations of abandonment have further developed methods for examining abandonment processes. Deal (1985), in a study of pottery disposal in the Maya Highlands, suggested that archaeological assemblages are the result of an evolutionary sequence with three behavioral stages: preabandonment, abandonment, and postabandonment. Each stage has a different set of depositional modes. The model provides a framework for interpreting behaviors such as provisional discard, caching, and scavenging that can be used to identify these behaviors in the archaeological record.

Archaeologists in the American Southwest have had a long fascination with abandonment. Remarkable temporal control, detailed environmental reconstructions, a comprehensive understanding of prehistoric cultural developments, and an historically rooted interest in explaining abandonments ("lost cities") combine to make the Southwest ideal for the investigation of abandonment processes.

Interest in Southwestern abandonments began at the turn of the century when spectacular thirteenth-century cliff-dwellings were discovered in the Four Corners area. When first discovered, these sites looked as if they had been abandoned only days before, but they were obviously of great antiquity. A catastrophe seemed evident, but what sort? Southwestern archaeologists have offered

many explanations over the decades, ranging from drought to raiding nomads. With the advent of the New Archaeology in the late 1960s, Southwestern abandonments began to be subject to more systematic examination. For example, Reid (1973) developed several innovative techniques for identifying the pattern of abandonment at Grasshopper Pueblo, a fourteenth-century site in east central Arizona. Since 1980, systematic exploration of Southwestern abandonments has increased.

Papers in this volume that focus on the Southwest have broader implications for archaeological interpretations throughout the world.

#### Scale of abandonment

Abandonment may occur on an increasingly inclusive scale from activity loci to large geographical areas. This continuum can be divided into two segments that are most important for understanding site formation processes. These are: (a) abandonment of settlements, which are often part of a regional system of settlement use, and (b) the abandonment of structures and activity areas within settlements (see also Cordell 1984:312–25). Recent studies of abandonment processes have begun to isolate variables that condition the character of the archaeological record at these two scales. The four Parts of the volume following this introductory chapter (Part I) contain papers using either ethnographic or archaeological data at each of the two scales, regional and intra-settlement.

#### *The regional scale*

Abandonment of regions, as addressed in this volume, is not primarily concerned with the depopulation of large territories. The regional approach taken here views abandonment as part of settlement systems that involve seasonal or periodic abandonment of settlements. Binford's (1973, 1977, 1978, 1979) work with hunter-gatherers provides much of the theoretical framework for such studies. Concepts he developed, such as "site furniture" and artifact curation, are the key to the identification of patterns associated with site abandonment in a regional system.

The abandonment of settlements is often a gradual process (e.g. Cameron 1991; Deal 1985:269; Schiffer 1987:91), although rapid, catastrophic abandonment obviously occurs (e.g. Rees 1979; Stevenson 1982). Where abandonment is planned and gradual, variables such as anticipated return to the site or distance to the next new settlement will affect abandonment behavior.

For example, where no return is anticipated, usable artifacts may be removed. If the distance to the new settlement is not great, even structures may be dismantled and building materials transported (Cameron 1991). Importantly, ritual may condition abandonment behavior, resulting in the deposition of unusual quantities or types of *de facto* refuse (Deal 1985:269; Kent 1984:139–41)

Settlement abandonment is “built into” the land-use patterns of many subsistence systems, including those of hunter-gatherers, pastoralists, swidden agriculturalists, and even some sedentary agriculturalists (cf. Kohler and Matthews 1988:559). Papers in Part II of this volume explore a variety of ethnographic settlement systems and show how the abandonment behaviors of each system may affect archaeological patterns.

Periodic settlement use by groups who rotate among a series of settlements throughout the year is examined in papers by Tomka and Graham: Tomka for transhumant agro-pastoralists in southwestern Bolivia; Graham for the agricultural Tarahumara of northern Mexico. These papers provide an interesting contrast in the types of artifacts left as site furniture and those curated and removed from temporarily abandoned sites.

Among agricultural villages in northeastern Iran, Horne recognizes continuity in the occupation or reoccupation of areas (locational stability) and discontinuity in activities at these areas (occupational instability). She suggests that cyclical or periodic changes in locational and occupational stability directly affect archaeological patterns in arid parts of the Middle East. Kent examines the effects of different mobility patterns among the Bushmen of Botswana on the assemblages of artifacts left at abandoned camps. At a broader scale, Stone defines two options for farmers faced with declining agricultural yields: intensification and abandonment. He examines “agricultural abandonment” as an adaptive response among Nigerian agriculturalists and seventeenth-century pioneers in the eastern United States.

Regional archaeological studies (Part III) seek methods for identifying the frequency and nature of abandonment of regions and link regional abandonment to larger environmental and social processes. Schlanger and Wilshusen examine abandonments of pit structures in the Four Corners region of the American Southwest between the seventh and tenth centuries AD. They associate climatic episodes with different types of structure abandonment. In the Tucson Basin of southern Arizona, Fish and Fish identify several periods of progressive abandonment during the Hohokam Classic period (twelfth to fourteenth centuries AD). Their

explanation of these regional abandonments has implications for the entire Southwest during the late prehistoric period. In lowland Portugal, Lillios examines widespread settlement abandonment at the end of the Copper Age (3500–2000 BC) using a center–periphery model. She suggests that the collapse of a regional settlement hierarchy led to the abandonment of many settlements and ultimately to the restructuring of the settlement system in the early Bronze Age.

#### *Intra-site abandonment*

Abandonment of structures or activity areas is a constant process in many settlements and has a direct effect on the entry of these features and the artifacts they contain into the archaeological record. The most important processes governing intra-site abandonment may be scavenging and reuse (Ascher 1968; Horne 1983; Lange and Rydberg 1972:422; Reid 1973:114–15; Schiffer 1976:34; 1987:25–46, 106–10). Although both scavenging and reuse can occur at abandoned settlements, these processes are especially pronounced in inhabited settlements where occupied and abandoned activity areas are in close proximity. Children’s play is another process that affects abandoned portions of occupied settlements, as well as nearby abandoned sites (Deal 1985:273; see also Hayden and Cannon 1983:132–3).

Intra-site ethnographic studies presented in Part IV explore abandonment within continuously occupied settlements and in a recently abandoned settlement. Rothschild, Mills, Ferguson, and Dublin find that “abandoned” farming villages near the Southwestern pueblo of Zuni have simply changed function from full-time or seasonal residences to use for a variety of episodic purposes ranging from storage areas to sources of raw material. Different functions for structures in these villages affect the distribution of artifacts around structures. In a complementary study of an abandoned domestic compound in Oaxaca, Mexico, Joyce and Johnsen found that four structures at the site were subject to different abandonment processes reflecting their original function and plans for future use. They suggest that specialized structures may be less impacted by abandonment activities than non-specialized structures.

Archaeological intra-site case studies examined in Part V suggest innovative methods for identifying abandonment behavior in archaeological contexts and link such behavior to the causes and circumstances of abandonment – a first step in the archaeological identification of abandonment processes.

Montgomery uses a “room abandonment measure” to identify an unusual pattern of abandonment at the

thirteenth century pueblo site of Chodistaas in east central Arizona. She found that ritual activities were involved in the abandonment of Chodistaas. Lightfoot recognizes three distinct types of abandonment for pit structures at the Duckfoot Site in southwestern Colorado by comparing ceramic assemblages for each pit structure with expected ceramic assemblages determined through a simulation study. His study offers methods of filtering out the effects of abandonment behavior on archaeological assemblages. Brooks has developed a series of measures, using both artifacts and architecture, for distinguishing planned from unplanned abandonment in a study of Native American groups on the Great Plains during the late prehistoric and historic periods. His study provides a set of procedures for determining the nature of abandonment processes operating at sites and for determining the integrity in spatial patterning of artifacts on house floors.

#### New directions

The investigation of abandonment as a site formation process is long overdue. Exploration of the complex interaction between abandonment processes and resultant archaeological patterns is approached systematically for the first time by the papers in this volume. At both the regional and intra-settlement scales of analysis, ethnoarchaeological and archaeological cases provide empirical patterns necessary for understanding abandonment behavior within the context of prehistoric cultural systems. These studies suggest new directions for the study of abandonment.

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PART II

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**Regional abandonment  
processes:  
ethnoarchaeological cases**

## 2 Site abandonment behavior among transhumant agro- pastoralists: the effects of delayed curation on assemblage composition

STEVE A. TOMKA

### Introduction

In recent years studies by Binford (1979), Shott (1986, 1989), Torrence (1983, 1987), Bleed (1986), and others have significantly contributed to the understanding of the relationships between land-use patterns, technological organization, and assemblage composition. These studies focus primarily on the conditioning effects of subsistence organization. The effects of abandonment processes upon assemblage composition have received relatively less attention. In general, assemblage structure and content are seen as conditioned by artifact use life (Schiffer 1975; Shott 1989), various discard behaviors (Deal 1985; Schiffer 1987), and curation at the time of site abandonment (Binford 1973; Schiffer 1987). Abandonment studies have alerted us to another series of processes that condition the composition of archaeological assemblages (Joyce and Johannessen 1987; Lange and Rydberg 1972; Schiffer 1987; Stevenson 1982). Stevenson, working at nineteenth-century gold rush mining camps, was the first to consider systematically the effects of abandonment conditions on the proportion of curated and discarded artifacts. Based on the composition of abandoned assemblages and the presence of abandonment caches, Stevenson also suggested, among other things, that the anticipation of return may significantly affect abandonment behavior.

The gold rush camps distributed along Bullion Creek were abandoned relatively suddenly and in an unplanned manner because of flooding, poor working conditions, and the discovery of a rich strike some distance from Bullion Creek. The camps located on Mush Creek were abandoned under more normal conditions, and

without anticipation of return (Stevenson 1982:238–40). Although in anticipation of return to some of the Bullion Creek gold rush camps some artifacts were clustered in abandonment caches, the gold prospecting land-use pattern was not based on seasonal camp abandonment and reoccupation. In general, it is likely that the probability of return to these abandoned camps may have been quite low owing to the exploitation of a non-renewable resource (i.e. gold ore). It is clear that the organization of the overall system has significantly influenced the circumstances of site abandonment and, in turn, conditioned abandonment processes.

Although within some foraging (Fisher 1989) and most logistically organized (Binford 1978) resource acquisition systems the seasonal abandonment and reoccupation of sites is a central feature of the land-use pattern, few ethnoarchaeological studies document the nature of the abandonment processes operating under such conditions (Graham, this volume). While in logistically operating systems anticipated return underlies the planned seasonal abandonment of a site, its actual reoccupation may not always be feasible or desired. The probability of site reoccupation may be influenced by such factors as short and long-term fluctuations in climatic conditions, the structure and abundance of resources in the vicinity of existing sites, changes in household economic base, and changes in community and regional territorial boundaries. Little is known of the processes operating under circumstances when site abandonment is planned and return anticipated but subsequent reoccupation is delayed.

The fourteen-month ethnoarchaeological study of agro-pastoral transhumance, carried out between 1984 and 1988 in Estancia Copacabana, southwestern Bolivia, provided the opportunity to investigate the processes operating under conditions of extended site abandonment and anticipated, but delayed, reoccupation. The transhumant land-use system, described in more detail below, is based on the seasonal abandonment and reoccupation of distinct pastoral and agricultural residences. Owing to fluctuations in household economy and/or demographics, either of these may remain abandoned for extended periods (longer than the annual cycle) only to be reoccupied when feasible. The abandonment of either residence is not accompanied by regional abandonment; the area continues to be regularly criss-crossed by family members participating in intra and inter-regional reciprocity, barter, and market relationships. Consequently, these abandoned residences remain within the economically utilized regional sphere. The goal of this paper is to define one of the



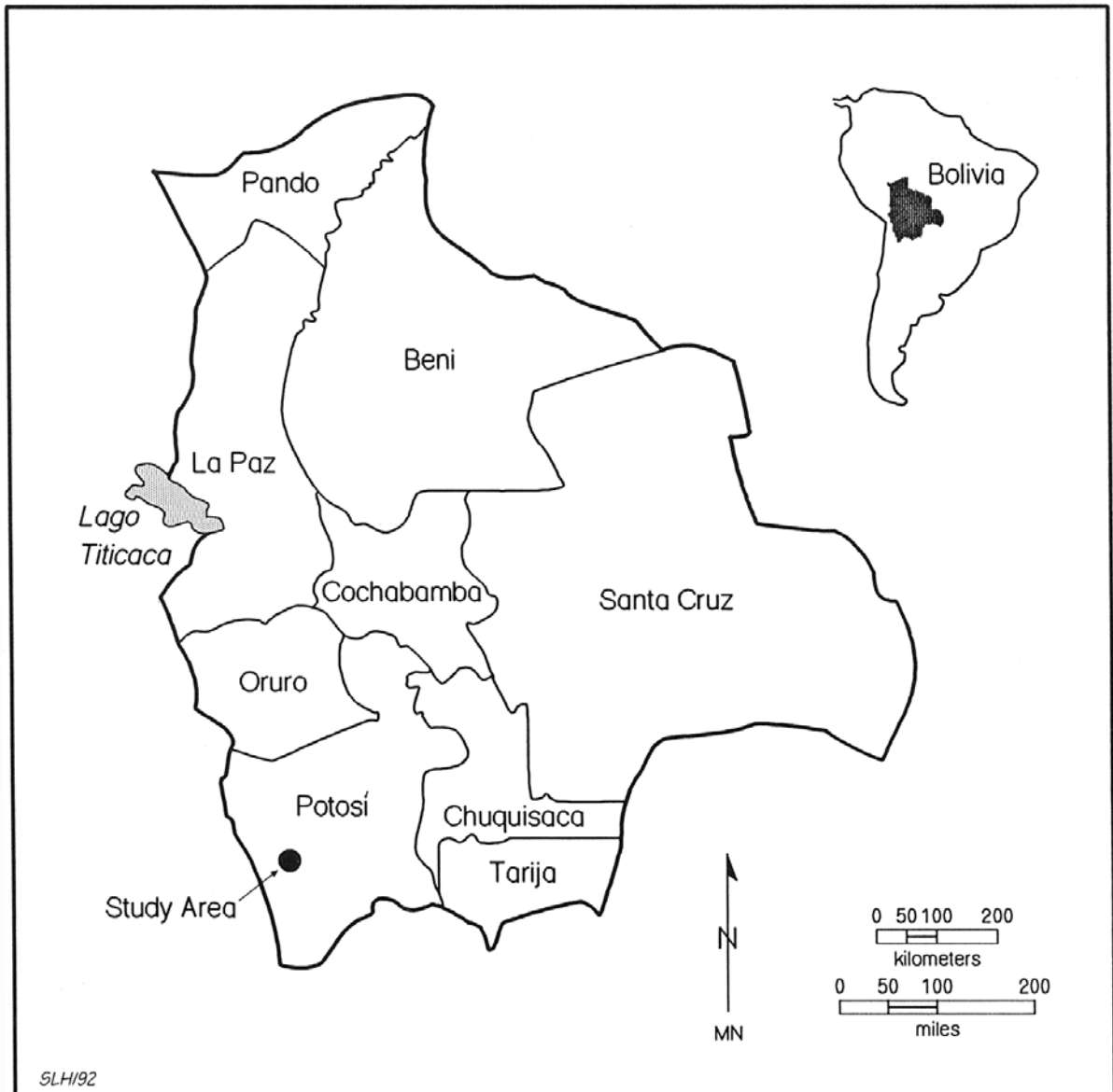


Fig. 2.1 Location of Estancia Copacabana, the study area, in the Department of Potosí, Bolivia.

abandonment processes operating under circumstances of anticipated but delayed site reoccupation, and monitor its effects on assemblage size and composition.

#### The transhumant agro-pastoral land-use system

Estancia Copacabana is located in the cold temperate montane desert lifezone (Holdridge 1967) of south-

western Bolivia (Fig. 2.1). Mean annual rainfall is extremely low (100 mm), with over 90 percent falling between December and February, during the southern hemisphere summer (Johnson 1976:151). This inhospitable climate supports a vegetation of rosette perennials, cushion plants, and tussock grasses. The few glacial melt-water-fed rivers form veritable oases in the otherwise desert environment.

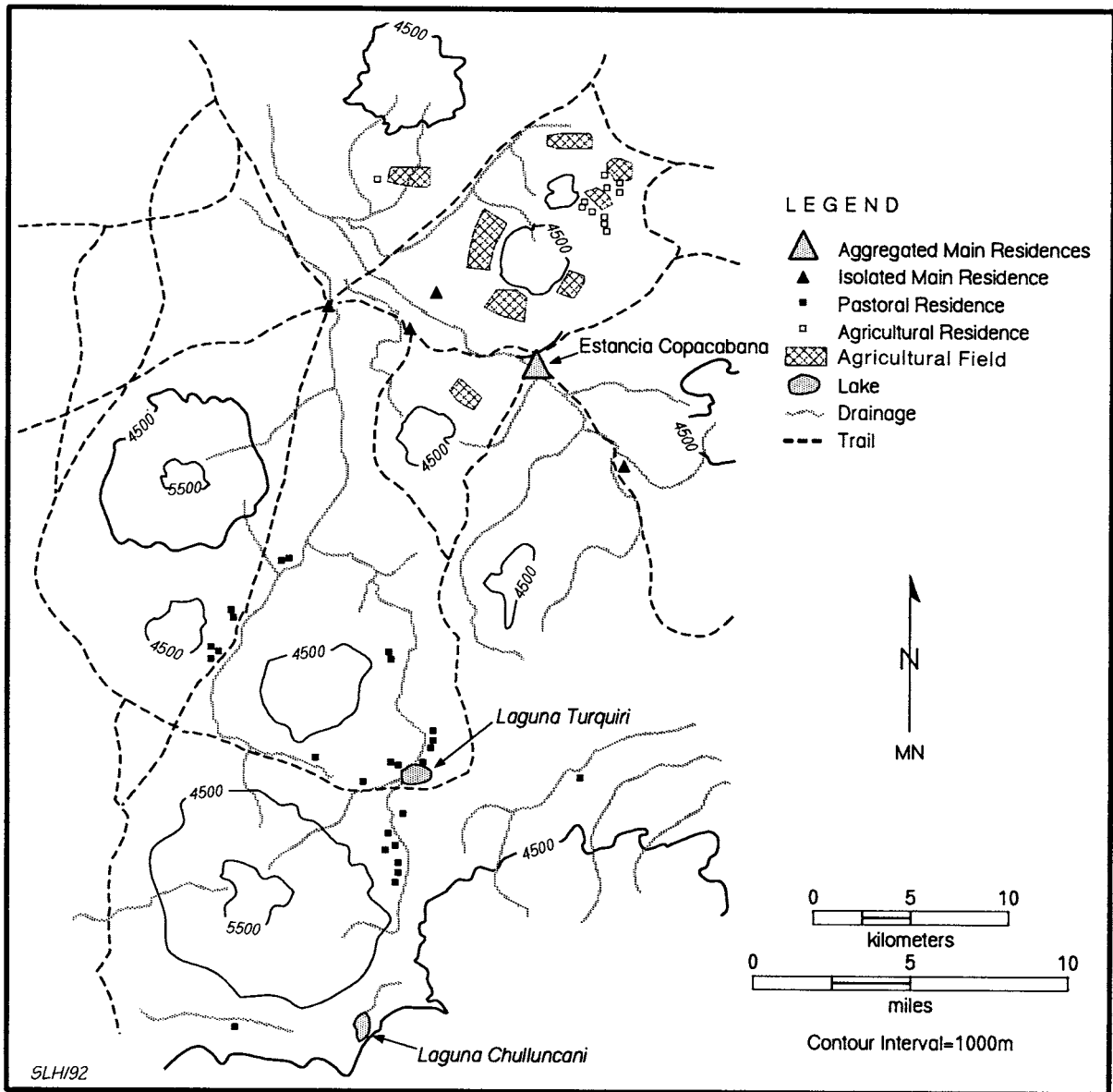


Fig. 2.2 Distribution and locations of selected main, agricultural, and pastoral residences utilized by transhumant agro-pastoral households in Estancia Copacabana.

The community members are subsistence agro-pastoralists. Most households rely on quinoa (*Chenopodium quinoa*) and tuber agriculture, and llama (*Lama glama*) and sheep herding. Two forms of agro-pastoral production are practiced: seasonally transhumant and semisedentary. Seasonally transhumant households utilize distinct pastoral, agricultural, and main resi-

idences. Semisedentary households occupy only main and agricultural residences.

Transhumant household main residences are centrally located between the lower agricultural and the higher pastoral residences (Fig. 2.2). The main and agricultural residences that belong to semisedentary households are located in the vicinity of those of transhumant house-