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### Abstract

Nyangatom agropastoralists settled along the Omo River to the north of the Dasanech rely primarily on flood recession agriculture on riverside flats, with subsidiary fishing and exploitation of forest resources. These Omo River dependent communities maintain complex social and material exchange with other Nyangatom settlements in both the Kibish River-Koras Mountain area at Ethiopia's western border and in the Ilemi Triangle-South Sudan, where they share lands with the Toposa ethnic group. Nyangatom pastoralists and agropastoralists frequently clash with Dasanech and Turkana herders over grazing lands and water resources. The extensive Omo riverine forest—the last such pristine forest within semi-arid Sub-Saharan Africa—requires substantial soil moisture retention from the Omo River's annual flood. Cessation of the flood would quickly promote the death of the forest and destruction of its abundant wildlife and resources essential to Nyangatom survival. Thousands of Nyangatom living along the river would suffer immediate disaster from the effects of Gibe dam closure and dam enabled irrigated agricultural enterprises. Like the Dasanech, the Nyangatom also are subjected to major expropriation and repression by the Ethiopian government, as well as major cutting of their forest by the Ethiopian government and its allied development interests.

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### Nyangatom Omo Settlements and Dependence on Riverine Resources

- **The Nyangatom, like the Dasanech and other neighboring pastoral groups, have a complex and highly adaptive survival strategy system.**<sup>1</sup> Their economy, like that of the Dasanech, depends on both Omo riverine and upland plains environments. Nyangatom settlements extend over a broad area—from the riverine forest along the Omo River westward to the Kibish River near Koras Mt. and well into the Ilemi Triangle where they coexist with the closely related Toposa.<sup>2</sup>

The exclusion of all indigenous groups from the contested Ilemi Triangle for several decades effectively created a buffer zone among ethnic groups, as viewed by the Ethiopian and Kenyan administrations. Long shared by the region's pastoralists and only minimally impacted by them because they had wide-ranging options for seasonal herding, the Ilemi supported rich wildlife populations and relatively pristine grassland environments (Carr 1977). Expulsion of the Nyangatom from their lands in the eastern Ilemi Triangle, in essence, split them into two segments: a largely pastoral one based in the Ilemi and an agropastoral or agricultural one settled along the Kibish and Omo rivers.

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<sup>1</sup>The Nyangatom were long referred to as the “Donyiro” and “Bume” by outsiders. A collection of detailed description and analysis can be found in Tornay (1979, 1980, 1981), Tornay et. al. (1997) and Tornay and Tvedt (1993).

<sup>2</sup>Although this writer once had easy access to Nyangatom villagers, it is now extremely difficult to interact with villagers, due to intense surveillance by the GOE and pervasive fear of reprisal by local police. Villagers, pre no recent access has been possible, due to GOE restrictions. Consequently, information presented in this chapter is based primarily on interviews with Nyangatom at the Kibish River and in Omorate.

Movement between the two settlement poles and labor/product exchange relations between the Nyangatom's contrasting food production systems was disrupted although the group has maintained as much cooperation and interaction as their situation permits. The radical reduction of pasture and the split between settlement areas that has resulted from the governments' exclusionary policies have increased conflict between the Nyangatom along the Omo and Kibish Rivers (Figs. 1.3 and 8.1) and their Dasanech and Turkana neighbors. By contrast, the Kenyan authorities administrating the eastern Ilemi Triangle for decades have only moderately enforced the agreed upon exclusionary policy as it applies to the Turkana. Many in the region report that the GOK even encourages Turkana movement into the Ilemi lands that Kenya has long claimed.

The high concentration of livestock caused by the governments' policies in the Ilemi forced the Nyangatom (and Dasanech) to crowd their herds into lands between the Kibish River and the Omo River. As a consequence, these pastures became severely overgrazed and ecologically degraded, causing major new livestock mortality and herd decline. Nyangatom pastoralists have faced continued deterioration of grazing areas—a trend worsened by prolonged droughts affecting all transboundary groups. Nyangatom pastoralists interviewed by SONT describe major livestock losses—similar to those reported by the Dasanech and the northern Turkana (see Chaps. 7 and 9).<sup>3</sup> Livestock herded around Koras Mountain, and along the Kibish River are watered at the seasonally flowing Kibish River. During drought seasons, villagers dig water holes in the dry riverbed of the Kibish (Fig. 8.2). These watering holes, frequently extending to 7 or 8 m depths.

**Nyangatom villagers along Omo River have resided in well-established settlement areas—generally near the water—where they rely on flood recession agriculture, with a variety of subsidiary production activities.** Huts are semi-permanent and are constructed with grass over a frame of branches (Figs. 8.3 and 8.4). Households owning livestock typically send them to stock camps in the upland plains, especially during the many years of tsetse fly presence in the riverine zone. These Nyangatom pastoralists have long concentrated in the Koras Mt.-Kibish River, where they Dasanech herders, and in the Nyangatom–Toposa grazing lands within the Ilemi. There are constant treks back and forth among the Nyangatom at the Omo River, and those along the Kibish River and in the Ilemi (Fig. 8.1). Nyangatom stock owners, like their Dasanech and Turkana counterparts, maintain highly flexible seasonal movements of their livestock herds in response to environmental, socioeconomic and security conditions.

**Flood recession agriculture by the Omo-dwelling Nyangatom is primarily on seasonally flooded point bars and river silt/sand flats along the Omo River. Overbank flooding does not occur upstream from the active delta.** Crops grown by these villagers are basically the same as those planted by the Dasanech (see Chap. 7), with sorghum and maize as main staples. Grain product is stored in high overhead granaries (Fig. 8.3) that add protection from wildlife. Numerous Nyangatom settled at the Omo River, particularly the poorer households, have taken up fishing—mostly in river waters upstream from the Dasanech, either in dugout canoes or along the shoreline. Until their recent acquisition of gear from merchants and neighboring groups, Nyangatom fishers have used simple technologies including ropes, harpoons, locally constructed nets and small blades (through exchanges with neighboring groups). The Nyangatom complain of decreased fish catch following the incursion of GOE-supported commercial fishing enterprises in the Omo River and Lake Turkana (see Chaps. 7 and 9). The acceleration of commercial fishing in the region, which villagers describe as destructive of fish reproductive habitat as well as catch levels, has been occurring just as Nyangatom villagers had had to rely more on fishing in order to cope with their economic decline.

**Nyangatom residents depend on riverine habitat for a host of production activities subsidiary to recession agriculture.** In addition to livestock raising, these include wild food gathering, hunting, fishing, beekeeping and boat-making and household small item manufacture for exchange (see Table 8.1 and Chap. 4). As with sorghum and maize growing, these activities are for both domestic consumption and exchange (Fig. 1.6). These secondary types of production take on major importance during times of high stress, including from failed or insufficient Omo River flooding for recession agriculture, crop losses by pest invasions, prolonged drought periods in the upland plains or loss of livestock from disease, raiding by neighboring groups or loss of access to resources due to government.

➤ **Nyangatom communities along the Omo River have no realistic alternatives for their survival—certainly no options for new settlement or major resource access** since they are bordered on all sides by ethnic groups experiencing similar losses of land and resources and with whom they frequently have hostile relations, including the Suri, Kara, Hamar, Dasanech and Turkana (Fig. 1.3). In the face of recent decline and government expropriations, many young Nyangatom men

<sup>3</sup>Research by Bassi (2011) in recent years provides some excellent perspective on Nyangatom cultural history.



**Fig. 8.1** Nyangatom trek from Omo River villages to Kibish River and Ilemi Triangle settlements

respond by traveling to South Sudan where they acquire arms from liberation forces (most identify the SPLA)—later returning to their homelands along the Omo and Kibish Rivers. This dynamic has weakened traditional authority systems and intensified conflict among transboundary ethnic groups, according to Nyangatom elders.

Nyangatom relations with the Turkana, with whom they are closely related in linguistic and cultural terms, have fluctuated greatly over the years, with peaceful periods punctuated by raiding and violence. The situation has recently inverted, with frequent hostilities erupting, particularly within the context of the Kenya government's 'encouragement' of Turkana re-entry into the contested Ilemi Triangle. The situation is at least as volatile between the Nyangatom and the Dasanech, with their overlapping traditional resource areas and the GOE's expropriation of both groups along the Omo River. One area where clashes are often extreme is around Koras Mt. and the lowermost Kibish River, where some of the few stock watering and grazing alternatives to the Omo River environments exist.

Nyangatom dependence on the Omo River for recession agriculture and fishing, along with their reliance on the riverine forest for secondary subsistence activities are ignored in the GOE impact assessment (2009b) and is barely mentioned in the 2010 EIB report.

**Construction of the Gibe III dam and large-scale irrigated agricultural enterprises would essentially dismantle Nyangatom livelihood along the Omo River. This destruction would occur in at least three ways:**

- (i) The predicted 60–70 % reduction in Omo river flow volume during the years of reservoir fill and early operation of the dam promises cessation of annual flood sufficient for recession agriculture in most locales.



**Fig. 8.2** Nyangatom man and woman at (5 m deep) watering hole dug in Kibish riverbed during the dry season. Kibish waters are the main alternative source of water by Omo River dwelling Nyangatom and well access is a source of conflict with the Dasanech and Turkana



**Fig. 8.3** Nyngatom family in village alongside the Omo River's west bank. Household granary and food storage on elevated platform, with day hut and thorn fence in rear



**Fig. 8.4** Nyangatom in agropastoral villages along west bank of the Omo River. *Left* Woman with son at mid-day in village. *Top right* children in central square of village. *Bottom right* aerial view of semi-permanent village (chicken hutch and fence repair visible)

**Table 8.1** Nyangatom livelihood activities dependent on riverine habitat

Production activity	Location
Flood recession agriculture	Riverside point bars, waterside flats
Livestock watering, grazing	Woodland/transition zone, waterside
Wild food gathering	
Fishing	Riverine forest/woodland
Beekeeping	Omo River waters
Hunting	Riverine forest, woodland and transition
Dugout boat-making	Riverine forest

**Radical river reduction would terminate Nyangatom flood recession agriculture along the river—parallel to such destruction in Dasanech lands downstream. Like the Dasanech, Nyangatom villagers insist that they receive too little flooding by the Omo River, not excessive flooding.**

- (ii) The drop in water level and associated major impacts on the river's oxygen, sediment and nutrient replenishment would destroy fish habitat in the river and disrupt the seasonal migration of fish upstream from Lake Turkana and delta waters, destroying Nyangatom fishing livelihood.
- (iii) The well-developed Omo riverine forest in Nyangatom territory would be destroyed by the radical drop in the river's flow volume and the effective elimination of the annual flood—in turn destroying the key subsidiary activities of wild food gathering, hunting and beekeeping.

Nyangatom communities along the Omo would face widespread hunger and desperation—conditions exponentially worsened by the GOK's expropriation of their lands and clearing of their forest for new commercial scale irrigated agricultural farms. Unable to be mitigated by long-standing exchange relations between Omo riverine zone dwelling Nyangatom with their counterparts settled around Kibish River (Fig. 7.6) and in the Ilemi Tri-angle. Under such dire conditions, the most likely survival option for the Omo Nyangatom would be to migrate back to the Nyangatom and Toposa settlement area in the Ilemi Triangle. This desperate movement would inevitably intensify the already widespread armed conflict in the region as ethnic groups compete for what resources remain (Figs. 5.3 and 5.4).

**Like their Dasanech neighbors downstream, the Nyangatom are already experiencing the dismantling of their survival system due to actions by the Ethiopian government.** These actions include eviction of settlements and expropriation of their planting lands in favor of the large commercial irrigation agriculture. Recent reports by the Nyangatom include accounts of major such measures by the GOE.

## Fate of the Forest: Nyangatom Survival and Ethiopia's Heritage

- **The Omo riverine forest and woodland is the last remaining pristine riverine forest in the drylands of Sub-Saharan Africa** (Fig. 8.5). The GOE assessment misrepresents these low altitude riverine forests as basically equivalent to those upstream at higher elevations, when they are in fact unique and without such substitute plant communities upriver. Comparable riverine forests in semi-arid/arid regions in Sub-Saharan Africa have already been eliminated by river flow reduction from large hydrodam construction—dams much smaller than the Gibe III. In the African Horn and East African region alone, the riverine forests along Ethiopia's Awash River and Kenya's Tana and Turkwel rivers have already been largely destroyed by hydrodam and associated developments.

**Death of the forest along the lowermost Omo would result from radical reduction of the river's flow, since the forest's adaptation to the high/low extremes of flow would be destroyed.** Highly sensitive root systems of riverine forest have evolved in response to fluctuations of subsurface moisture and nutrient replenishment provided by the annual flood's permeation of the natural levee soils, since overbank flooding does not occur upstream from the modern Omo delta. The root systems of the forest tree and shrub species depend on a necessary period of retention of river waters by soils—that is, the '*residence time*' of subsurface soil moisture.



**Fig. 8.5** Omo riverine forest in Nyangatom region. *Top photos* Buttressed large fig and other shallow-rooted forest trees. *Center* Nyangatom man on sandy/silty spit on inside river bend; flood recession agricultural plot and non-flooded riverine forest in background. *Bottom* Straight channel with thin recession agricultural plots along shoreline

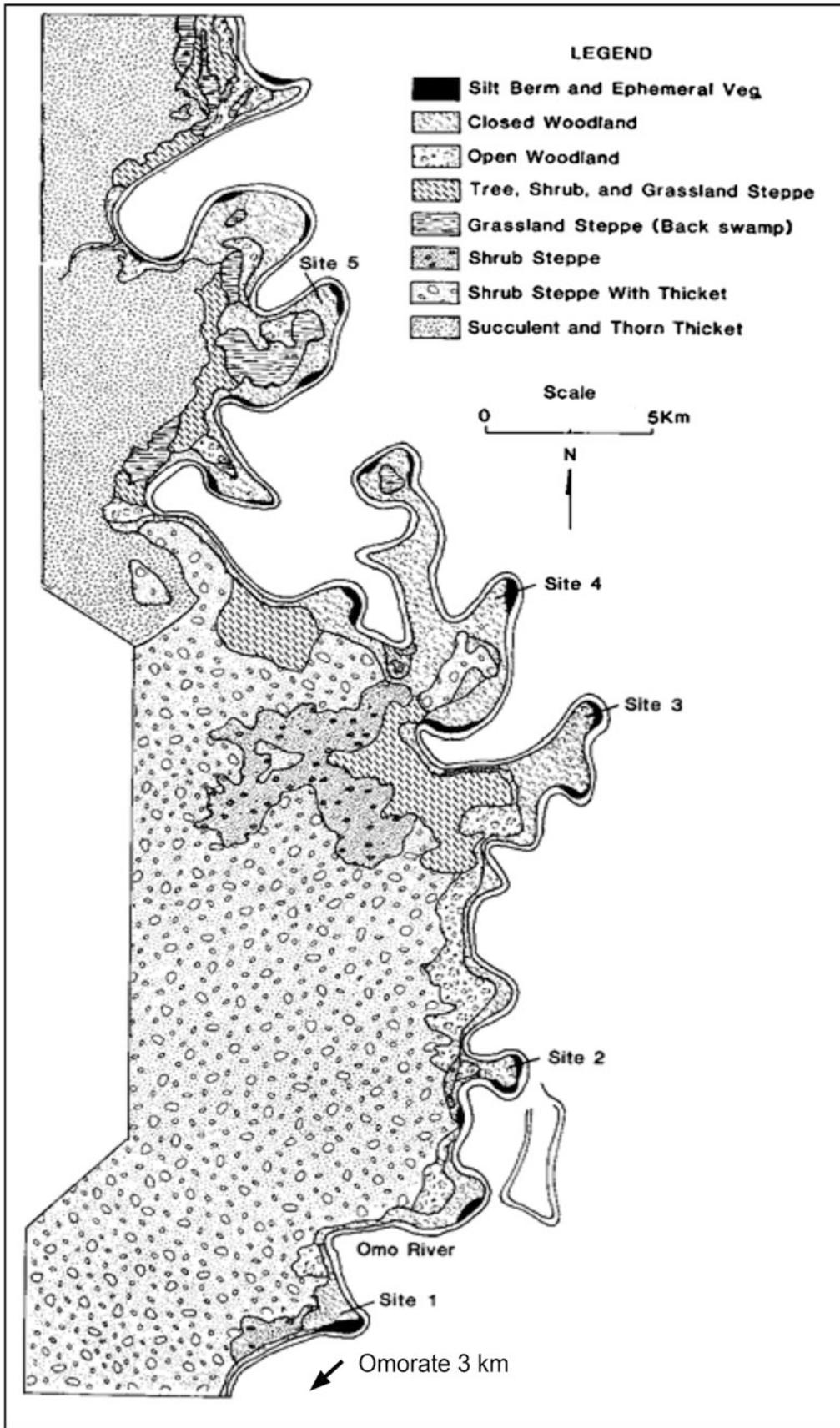
Specific soil moisture *residence time* is dependent on the Omo River's annual high water stage, including its substantial duration. The Gibe III dam and dam enabled irrigated agricultural development would eliminate the 'residence time' necessary for the survival of the forest.

**The rich wildlife populations in the Omo riverine forest, nearly undisturbed for centuries, would be exterminated by the effects of the Gibe III and dam enabled irrigated agricultural schemes due to the elimination of their forest habitat.** Wildlife in the Omo riverine (or 'gallery') forest zone, includes the Nile crocodile, hippopotamus, elephant, buffalo, lion, leopard, kudu, monitor lizard, Colobus monkey, grivet monkey, baboon, bushbuck, and a host of water-loving birds, including the fish eagle. Wildlife experts at the University of Addis Ababa describe the area as the second richest wildlife area of Ethiopia, underscoring its importance to Ethiopia's natural heritage, with major potential for park and tourism development. These populations would be rapidly eliminated by forest destruction.

The riverine forest is a highly delicate biotic community, with emergent trees extending to 30 m, with a secondary level of spreading shrubs. All major taxa are included in the species list of Appendix B. Large portions of the landward side of the forest are dominated by shrub thicket, with abundant vines and succulents. Some inside bends receive sufficient subsurface inundation of Omo River floodwater to create grassland swamps. Ecological studies in the Omo riverine zone (Carr 1998) detailed a variety of vegetation types ranging from forest to closed woodland, open woodland and different types of grassland (e.g., grasses with and without scattered trees and shrubs, and with different amounts of herbaceous ground cover). Shrub thickets are common throughout the 'transition zone' from forest/woodland to the broad relict floodplains (Fig. 8.6).



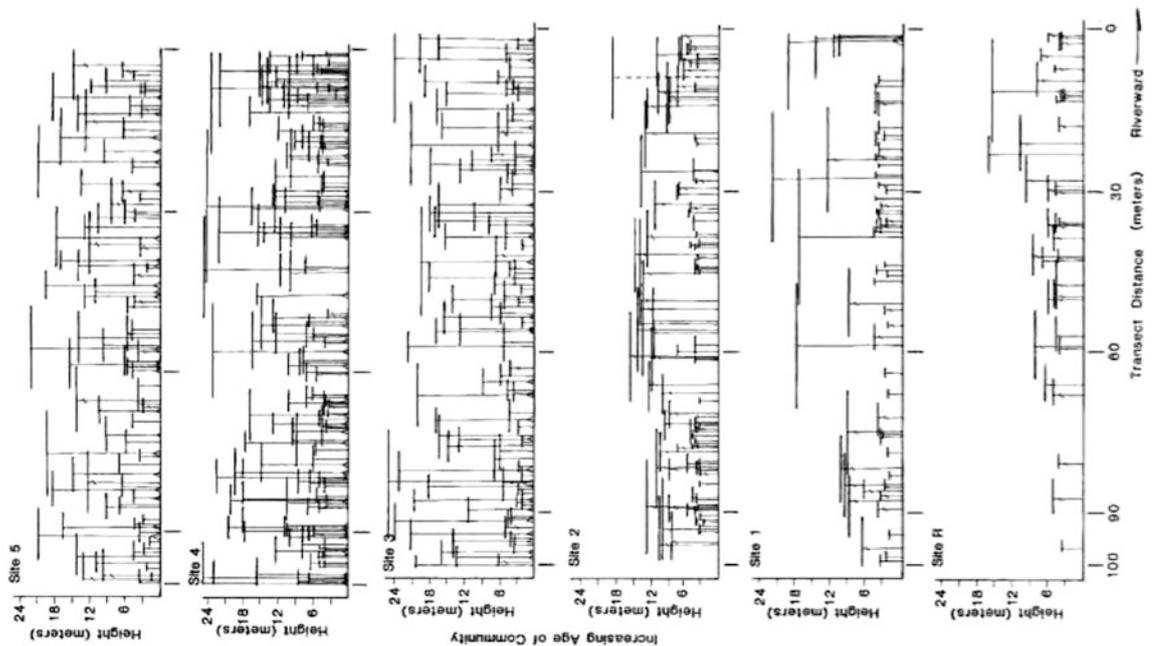
**Fig. 8.6** Transition zone between the Omo riverine forest and adjacent drylands. Scattered trees and shrubs with discontinuous grasslands prevail. Like the forest, this zone is not flooded but is sustained by subsurface moisture from the Omo River's annual flood



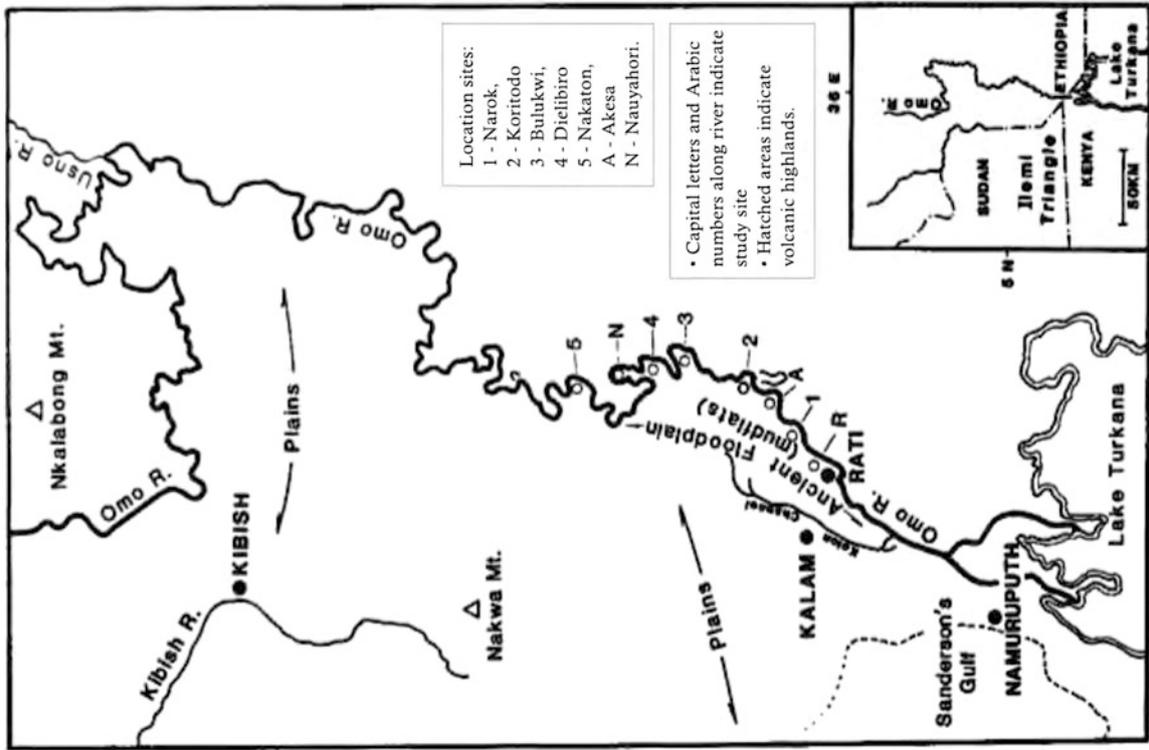
**Fig. 8.7** Riverine vegetation types along the lower Omo River. *Source Carr (1998)*

Riverine woodland and forest structure profiles in order of increasing age of site development.

'Birdfoot' base indicates multiple stem at ground level; diagonal cross on stem indicates buttressing.



Locational map for Lower Omo River Basin Study



**Fig. 8.8** Riverine forest development along the lowermost Omo River. *Left* Riverine forest and woodland studies with young to mature forest. Vegetation development along a gradient of river natural levee exposure (from south to north) following Lake Turkana retreat. *Right* Location map of study area. *Source* Carr (1998)

Complex depositional patterns and soil/water conditions produce a mosaic-like pattern of vegetation types—increasing the range of grazing potential for livestock types with different nutritional needs and sensitivity to changing water and disease conditions. Figures 8.7 and 8.8, taken from this writer's studies of the Omo riverine forest (Carr 1976, 1977, 1998), summarize the complex development of riverine forest and woodland along the Omo River's as well as its transition to adjacent dryland vegetation communities. A south to north gradient of forest development (from younger to older plant communities) is evident from detailed plant ecological studies at the sites indicated in Fig. 8.8.

The Gibe III dam and dam enabled large-scale irrigation agriculture would cause the cessation of flooding of riverside flats where the Nyangatom carry out their main survival activity—flood recession agriculture. These developments would also destroy the vast majority of riverine zone vegetation types shown in maps.

**This destruction of vegetation, in turn, would eliminate Nyangatom (and Dasanech) last remaining areas pasturage for livestock grazing, wild food gathering, hunting and other activities that are their only means of survival during the most severe hardship periods.**

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