Permanent vs. shifting cultivation in the Eastern Woodlands of North America prior to European contact

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Abstract. Native food production in the Eastern Woodlands of North America before, and at the time of, European contact has been described by several writers as “slash-and-burn agriculture,” “shifting cultivation,” and even “swidden.” Select quotes from various early explorers, such as John Smith of Pocahontas fame, have been used out of context to support this position. Solid archaeological evidence of such practices is next to non-existent, as are ethnographic parallels from the region. In reality, the best data are documentary. Unlike previous assessments, this paper evaluates sixteenth and seventeenth century ethnohistorical references to anything that can be even remotely construed as supportive of previous claims. Analyzed as a group these sources reveal something completely different from what common knowledge would have us believe. References to the slashing, the burning, and the shifting of fields are reasonably abundant. Rarely, however, are all three activities mentioned in a single passage, or by one chronicler. Furthermore, subtleties often overlooked in these quotes reveal great insight into native practices. This paper assesses explorers’ and early settlers’ descriptions in the context of the larger body of literature dealing with the ecology of swidden agriculture today. Indigenous fields in the Eastern Woodlands tended to be large, numerous, contiguous, and cleared of roots and stumps. Fields previously cleared of trees were covered with grass prior to preparation for planting. They were permanently cultivated. This condition stands in marked contrast to present-day swidden fields in other parts of the world that tend to be small, few, scattered, partially cleared of trees, and cultivated for only a year or two before being abandoned. Slash-and-burn shifting cultivation became common only after European settlers introduced steel axes. It was then practiced on uplands, not the formerly cultivated floodplains that were usurped by interlopers.

Key words: Ecology, Eastern Woodlands, Shifting cultivation, Slash and burn, Swidden agriculture

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Introduction

As its name implies, the Eastern Woodlands of North America – extending from the Atlantic Ocean to the Mississippi River and from the Gulf of Mexico to well into Canada – was densely vegetated with tall woody species in aboriginal times. Accordingly, agriculture in the region, on anything other than a very small scale, required that land be cleared of trees. Although total clearance, or the removal of every tree, was not necessary, some, if not most or nearly all, trees must have been removed from what were to become fields. The clearance of trees was a two part process. First, trees were felled, typically with stone axes that are common archaeological artifacts across North America (e.g., Brown, 1984: 36–37). Second, felled trees were removed, typically by means of fire (e.g., Driver and Massey, 1957: 226).

That fields were cleared of trees by the use of axes and fire has resulted in many writers (e.g., Brasser, 1971: 64; Watson, 1988: 41–42) describing pre-European agriculture in the Eastern Woodlands as “slash-and-burn.” To be sure, fields were slashed and burned, but to what extent does slashing and burning imply what is normally thought of as slash-and-burn agriculture? To many scholars (e.g., Day, 1978: 795; Weatherford, 1988: 83–84), slash-and-burn agriculture is synonymous with “swidden” agriculture that involves “shifting cultivation,” or the periodic rotation of fields. Indeed some authors (e.g., Williams,
that evidence of slashing, burning, and field rotation of European contact was a swidden system requires culture in the Eastern Woodlands prior to the time requires all three activities. The extent to which agriculture in the region mention neither “slash-and-burn,” nor “swidden,” but do refer to field movement and fallowing. The degree to which all of these claims imply the practice of slash-and-burn shifting cultivation, or swidden is debateable. However, there exists such a large number of works that mention this form of cultivation in the context of pre-European agriculture in the Eastern Woodlands that the notion merits indepth consideration. Such is the purpose of this paper.

Following a brief outline of some general concepts of swidden, the documentary and archaeological evidence of slashing and burning is analyzed. This is followed by assessments of the documentary and archaeological evidence of field rotation. Data against the notion of swidden are then presented, and, finally, a case for post-European introduction of swidden is made.

General concepts

True to its name, slash-and-burn shifting cultivation involves slashing, burning, and field rotation. The principal function of slashing is forest clearance. Burning completes the clearance process and it adds nutrient-rich ash to soils characterized by otherwise low fertility. Because crops deplete nutrients from the ash rather quickly, fields are abandoned after two or three years, and another section of the forest cleared. After a period of several years, the forest regenerates itself and is once again rejuvenated and ready for clearing and cultivation, hence fields are rotated.

Fields can, of course, be slashed and rotated without being burned, or burned and rotated without being slashed. It is also possible that fields can be slashed without being burned and rotated, burned without being slashed and rotated, or rotated without being slashed or burned. True swidden, however, requires all three activities. The extent to which agriculture in the Eastern Woodlands prior to the time of European contact was a swidden system requires that evidence of slashing, burning, and field rotation be scrutinized. Burning, however, is a difficult topic with which to deal as it was used for a multitude of reasons including: to enhance the growth of certain “wild” plants; and to clear undergrowth of forests in order to facilitate hunting, drive game, drive away reptiles and insects, facilitate travel, improve visibility, and for offensive and defensive purposes in times of war (e.g., Maxwell, 1910: 86–94). In order to address the swidden issue, therefore, evidence for burning has to be related directly to slashing and planting. Similarly, given that forests can be cleared for a number of non-agricultural activities including the preparation of building sites, and the harvesting of building materials and fuel wood (e.g., Day, 1953: 329–330), evidence for the felling of trees by means of slashing as part of swidden cultivation has to be restricted to those situations that involved burning and planting as well.

Ethnohistorical evidence of slashing and burning

Somewhat surprisingly, there exists a mere six documentary references to natives slashing, burning, and planting in the Eastern Woodlands at the time of European exploration and settlement, the sixteenth and seventeenth centuries. Doubtless, the most commonly cited, and plagiarized (Strachey, 1953: 118; see Roundtree, 1989: 4), early account to be used as evidence of native swidden is that provided by John Smith of practices in Virginia in 1607. He reported the following:

The greatest labour they take, is in planting their corne, for the Country naturally is overgrowne with wood. To prepare the ground they bruise the barke of the trees neare the roote, then doe they scorch the roots with fire that they grow no more.

The next yeare with a crooked peece of wood they beat up the weeds by the rootes, and in that they plant their Corne (Smith, 1910: 357).

In the same area a few years later, in 1613, Henry Spelman provided a similar account, but one that contains additional information. He noted that:

They take most commonly a place about their howses to sett their corn, which if ther be much wood, in that place the[y] cutt doune the great trees sum half a yard aboue the ground, and ye smaller they burne at the roote pullinge a good part of barke from them to make them die, and in this place they digg many holes (Spelman, 1910: cxi).

Samuel de Champlain provided some informative accounts of clearing. Two from Canada place emphasis on burning, one even downplays slashing on the basis...