

Wampanoag Foodways

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To accurately understand and recreate the foodways of the Wampanoag in 1627, three factors must be kept in mind. First, the diet of people, English as well as Native, was very seasonal in nature. Although various foods, such as corn, beans, squash, shellfish, fish, lobsters, berries and nuts were dried and stored for winter use, people made concentrated use of resources as they became seasonally available. When recreating the foodways, one should attempt to highlight this seasonal nature, as it would have been centrally important to what foods people were eating at a given time of the year.

Secondly, it must be kept in mind that we are attempting to recreate the recipes and diet of people who lived over 300 years ago. We should not allow twentieth century culinary techniques and sensibilities to interfere with what our goal here is. After reviewing the few recipes we know of for the Wampanoag and comparable recipes from the Iroquois, it has been found that the diet was rich in diversity but scant in what went into a pot at one time. This will be discussed further when the basics of recipes are outlined. Additionally, the incorporation of items such as salt and especially sugar should be kept to a minimum. Of course, to our tastes, a sweeter nasamp or a saltier sabaheg tastes "better" but when these substances are added, our exhibit becomes nothing more than a simulation and not a recreation. While this appears to be an minor distinction, it will change how foodways are understood and appreciated. At the same time one should not attempt to connect with the children by comparing Wamapnoag cuisine to modern day foods by means of ridiculous comparisons. These would include the comparison of nasamp to "Berry, Berry Kixs". The fact that the cuisine of the Wampanoag in 1627 was different than ours today means that we should not attempt to turn a sabaheg into "Saturday Night Stew" so that it sounds better or tastes better to us.

COOKING UTENSILS

Central to cooking, are tools to process raw materials, vessels in which to cook in, utensils to serve the food with, and vessels out of which to eat the food. Few actual cooking implements from the seventeenth century Wampanoag have survived the centuries. Two wooden bowls, a wooden spoon and a handful of brass spoons are all that we have to represent those used in the seventeenth century. Pottery is more common, although all of the pottery which we reproduce are known to us from archaeological examples, no complete pots survive above the ground from that period. As a result, the equipment for understanding and recreating the foodways is based on the few surviving examples belonging to the Wampanoag and examples from other native Woodland cultures such as the Iroquois.

We know from Thomas Morton, who was closely associated with the Natives around present day Quincy, Massachusetts, that "They love not to be encumbered with many utensils, and although every proprietor knows his own, yet all things are used in common." (Morton 1634:57). Morton's

observation seems to state that there should be enough bowls, spoons and trays on site each day for the number of staff present on site on a given day.

Pots

Human made vessels substantial enough to survive thousands of years in the ground have been made in southeastern Massachusetts since a period of Native history called by archaeologists the Late Archaic. From 6,000 to 3,000 years ago people, most likely men, were producing cooking bowls carved from large soapstone pieces. Beginning approximately 3,000 years ago, people, most likely women, began producing clay pottery vessels which eventually replaced the soapstone pots. The earliest pots were straight sides and pointed on the bases and some archaeologists believe that these resemble basket styles common in these earlier periods (Braun 1994:63). By the seventeenth century, clay pots were "almost in the form of an egg, the top taken off" (Gookin 1674:11). The pots had shoulders and some bore a decorative style along their rims known as castellations, which some believe was borrowed from Iroquois, who archaeologists believe, began using it earlier than the Wampanoag.

The seventeenth century descriptions of Wampanoag pottery are fairly plentiful in their noting of the occurrence of clay vessels used in cooking, but they are scarce in their descriptions of the pots themselves. The earliest European note of the presence of clay pots for our area was by Edward Winslow when he noted them in one of the houses discovered when exploring on Cape Cod in 1620 (Winslow 1622: 144). He also noted their use in 1623 when he was visiting the ailing Massasoit. Here, he noted, "They have earthen Pots of all sizes." (Winslow 1623:35). Thomas Morton adds a little more detail to this by stating in 1637 that "They have earthen potts of diverse sizes from 1 quart to 3 gallons, very strong but thin." (Morton 1637:41)

By 1620 it appears that European metal kettles and pails, first acquired in the early seventeenth century, were beginning to become a more common place item in the average native home. Winslow noted two separate occurrences of European kettles or pails during the colonists explorations on Cape Cod in 1620 (Winslow 1622: 133, 144). It appears that Natives were interested in adding metal kettles to their inventory of foodways' utensils. As the century progressed, the traditional clay pot was being replaced by European metal kettles. William Wood, an English chronicler of New England, wrote in 1634 that the Natives whom he spoke with "(have) large kettles which they have traded for with the French long since, and still buy of the English as their needs require. Before this they had substantial earthen pots of their own making." (Wood 1634:86) In the early years of contact, copper and brass kettles were initially traded for to be used as a raw material to be cut up to be made into items ranging from pendants to arrowheads to spoons. As the century progressed, the old kettles which had holes in them, continued to be cut up, but the main impetus for the acquisition of the kettles became as cooking pots.

This does not mean that all people gave up the use of clay pots, but by 1674 when Gookin wrote that "The pots they seeth their food in, which were heretofore, and yet are in use among some of them, are made of clay or earth, now they generally get kettles of brass, copper, or iron." (Gookin 1674:11) these people were clearly in the minority. The main reason that they did this was most likely that which Gookin felt it was, that a clay pot is more easily broken than a metal one, although he also felt that the clay which was used was becoming too difficult to find as well (Gookin 1674:11).

For recreating the foodways of 1627, one should be using the traditional clay pot (Ohkuk) more often than we use the metal kettles (Mishquockuk), if for no other reason than because it is a new and challenging experience. When cooking with a clay pot, traditionally, in this program, we have placed the pot on three or four stones and built the fire beneath the pot. No documentary or archaeological source in our area talks about how women cooked in a clay pot, but looking to our south, to the Natives

of Virginia, their method of using a clay pot was drawn and described in 1588. De Bry shows a native cooking in a pot by placing the base of the pot in a depression in the ground, and then building the fire up around the lower portion of the pot (De Bry 1588: 60). This, being the only documented way we know the used the pots, should be the way that we cook in them. When cooking in the metal kettles, the fire should be set up as Winslow described the one they saw in 1620 on Cape Cod "In the middle were four little trunches knocked into the ground, and small sticks laid over, on which they hung their pots, and what they had to seethe." (Winslow 1620:144).

Other Cooking Utensils

Complementing the kettle in a Native home, were the bowls, spoons, trays and mortar and pestle used by the cooks. Generally, the bowls made by the men were of various sizes and capacities. Gookin stated this in 1674 when describing the woodenware of the Natives around Boston "Their dishes and spoons, and ladles are made of wood, very smooth and artificial, and of a sort of wood not subject to split. These they make of several sizes". (Gookin 1674:11). These same sentiments were echoed by other colonial writers of the period, such as Edward Winslow, John Josselyn and Thomas Morton. Commonly, there could be large serving bowls, smaller individual bowls, dishes or trays (all called *wunnaug*), small individual bowls and trays (*Wunnauganamese*), and spoons (*Kunam*).

Serving and eating vessels could also be made out of materials other than wood. Serving spoons, bowls (both *Wisq*) and bottles (*Quanoowask*), were made from the cultivated water gourd. This is probably the type of "bottle of oil" found by the colonists in 1620 on Cape Cod (Winslow 1620: 141). Although not as common as they were to the north, bich bark containers were made at least as far south as present day Boston. Gookin states that " Their pails they fetch their water in, are made of birch barks, atificially doubled up, so that it hath four corners and a hadle in the midst. Some of these will hold two or three gallons: and they will make one of them in an hours time(Gookin 1674:11). This is cooroborated by John Josselyn who stated that the Natives he met, probably those further north, had formerly made pots out of birch bark, but by 1672 they were using the metal kettles (Josselyn 1672: 101).

Foods were stored in baskets and bags (*Manoot/ Manootash*) which they used "Instaed of shelves...wherein they put all their household stuff; they have some great bags or sacks which will hold 5 or 6 bushels (Williams 1643: 50). The subject of Native basketry is covered elsewhere in the manual, so it will only be mentioned here. These baskets and bags were hung up around the cooking fire and within the house, and the larger ones were used to store corn in storage pits for the winter.

The final items relating to foodways which we have documentation for in this area is the mortar (*Togguhwhonck; Tacukck; Wiskunck*) and pestle (*Quinahsin*)used to grind corn, seeds and nuts, and the sifting basket. The only mention of the sifting of corn meal and cracked corn is by Gookin who stated "Also sometimes they beat their maize into meal, and sift it through a basket, made for that purpose. (Gookin 1674: 10). There are various other tools which were used by the Iroquois and other people living around the Wampanoag and Narragansett, but we have no evidence of their use in our area. These are illustrated in Figure 4. This does not mean they were not used here, it just means that they may have not been reported. These items include the Husking Peg for removing the husks from fresh corn; the Stone Mortar and Mueller, used to grind corn or seeds; Stirring Paddles, used to remove boiled bread from the pot or to simply stir soups; and the Deer Jaw Bone Scrapers, used to scrape Green corn from the cob.

Seasonality

Now that the tools used by the Wampanoag women to prepare food have been outlined and discussed,

the plants and animals which were harvested, hunted, and collected by the Wampanoag need to be discussed. Both Native and Colonial people in the seventeenth century were tied to nature and her seasonal cycles much closer than most people are today. Because both groups relied on nature to furnish the people's needs, they had to know when specific foods and materials were available to them. This is one of the aspects of life which we should try to portray. As a means of attaining this goal, the following discussion of the foods which were available and were used by the native people, will revolve around their concept of the seasonal cycle, as closely as it can be reconstructed.

The Wampanoag did not divide their year into the same segments that we do today, although, since both calendars are based on the lunar year and natural changes, they are similar. Their year was divided into thirteen "months" "according to the severall Moones; and they give to each of them significant names.." (Williams 1643:145). The months were names for important natural or cultural occurrences which happen during that lunar cycle, such as the Spring Month (Sequanakeeswush) or the Harvest Month (Taqontikeeswush). On a broader scale, the year was divided into the spring (Sequan) or Seed Time (Aukeeteamitch), the Summer (Neepun or Quaquesquan), the Fall (Taqonck), and the Winter (Papone) (Williams 1643: 144). This is at last how Roger Williams, who was very close to the Narragansett, understood the division of the year. They are very natural divisions, so they are probably true to what the people believed. In the sections which follow, the divisions of the year, beginning with the traditional New Year in Spring, will be discussed regarding how the seasonality affected the foodways of the Wampanoag.

SEQUAN and AUKEETEAMITCH (March to May)

Spring was a time of relative plenty as far as what was available to the Native people. It is fairly safe to assume that corn was still present in the spring, probably until early summer, around June or July, but not in the same quantities as in the Fall and Winter. Beans may also have been left over from the winter, but because there was never as much beans grown as corn, we might not even want to use them in the spring. The pumpkin dried from the previous year would also probably have been used up by this time as well.

Spring greens are probably one of the most important food source used by the Natives at this time of the year. These supplement the dwindling supplies of corn and provide vitamins lacking during the winter. Roots and tubers of plants such as Bulrush, Cattail, Jerusalem Artichoke and Groundnuts are available year round, but were added to soups in the spring. Other plants and plant parts such as Cattail shoots, Fiddlehead Ferns, Milkweed and Poke shoots, are only available in the spring, as some of these plants become poisonous later in their growth cycle (some botanists believe that Poke, Milkweed and even Fiddlehead ferns can be cancer causing).

The sprouts from other plants like sumac, raspberry were used by the Iroquois, and may have also been prepared by the Wampanoag (Parker 1968:93). Wild onions and garlic would begin to be used in the late spring into summer. Berries would begin to be used in May, towards the middle to the end of the month. Raspberries and Strawberries should begin to fruit and these can be dried or used fresh.

Ducks and geese are present in the Plymouth harbor in the spring "..to the end of March, sometimes in May and June" (Winslow 1622:294). The great flocks of Passenger Pigeons (now extinct) arrived in the beginning of spring and were present for much of the year to the northeast of Boston (Wood 1634:50). Smaller birds such as Bobwhites (a native species of quail), woodcocks, ruffed grouse, and heath hens (also extinct), and turkeys were available year round and may have been hunted in spring. Another less important food from birds was eggs and immature individuals taken from nests and eaten. Eggs do not seem to have been an important product harvested, but they were utilized (see Recipes

section below) and at least one archaeological site in Marshfield yielded abundant remains of young birds.

Another of the important seasonal occurrences was the spawning runs of fish into the fresh water rivers and eventually into ponds. John Pory and the Dutchman Isaac De Rasiers both note that in April and the beginning of May, herring and alewives traveled up Town Brook to spawn (Pory 1622: 07; De Rasiers 1627:75). Eels would also be another fish available in rivers until the middle of April. Tisquantum was trotting the Eels out of Town Brook and catching them with his hands in March of 1621 (Winslow 1621:196). As we are situated on the Eel River, we should make an effort to have eels as part of the foodways exhibit. Shads, smelts and possibly a little salmon also begin to travel upriver in late April and into May. Many of these fish were smoked dried at this time for use throughout the rest of the year (see Preservation, below)

It appears that the ocean fishing did not figure prominently into the people's diets until possibly May and on into summer. The only ocean fish caught in the early spring was the winter flounder, easily caught on the beach in relatively shallow water. As the spring progressed though, fishing became more a part of the diet. John Josselyn, in 1674, stated that "Their fishing follows spring, summer, and fall of the leaf first for lobsters, clams, flouke, lumps or plaice, and alewives, afterwards for bass, cod, rock, bluefish, slamon, lampreys and such." (Josselyn 1674:100). The later part of spring (May) would see men venturing out into the ocean in the mishoons to begin fishing for Bass (Rock and Sea), Cod, Cunner, Cusk, Goosefish, Haddock, Hake, Lamprey, Mackerel, Sea Robin (which was probably caught accidentally when fishing for other fish), Sturgeon, Tautog, Weakfish and Wolffish.

Shellfishing was practiced throughout the year, with soft shell clams, surf clams, blue mussels, quahogs, and moon snails could be collected at low tide or in shallow water in the spring. Oysters can be used as well but, as would have to be interpreted as having been traded from Cape Cod or from Weymouth, as they do not naturally occur in Plymouth Harbor. Lobsters and crabs also played an important social as well as food role for the people in the spring. Thomas Morton stated in 1637 that "savages will meet 500 to 1000 at a place where they come in with the tide to eat and have dried a store, abiding in the place for 4-6 weeks feasting and sporting together." (Morton 1637:90). Lobsters and the other shellfish were smoke dried to preserve them for the winter.

Mammals such as deer, rabbit and woodchuck were hunted year round, and were used in the spring. Many people believe that deer would not have been hunted in the spring by the natives, but it appears, from archaeological evidence, that in fact they were (Turner Farm). They probably were not hunted in the spring to the extent that they were in the fall into winter, as they are very lean without much fat on them at this time.

The final food source available in the spring were the turtles, which come out of hibernation generally in April. Species begin to lay eggs at this time, providing the Native people with a perfect opportunity to catch them. Of the eight species of turtles available in our area, the snapping and the painted turtles appear to be the most common ones eaten, as their bones are found at archaeological site more commonly than the other species.

NEEPUN or QUASQUSQUAN (June to August)

Summer can be seen as a time of plenty with regards to the wild natural bounty harvested by the people. Ocean fishing continued for the species fished for in Spring with the exception of the cod, hake and lamprey, which are not here in the summer. Added to these fish were those that appear in our area only when the water temperature is warm enough, such as dogfish, several species of shark, skates and

scup. Shellfishing continued throughout the summer, with many of them continuing to be smoke dried for the winter.

It does not appear that fowl were hunted to any great extent during the summer. As Winslow stated in 1621 "As fowl decreases in March, so the fish increases" (Winslow 1621:294). Turkeys and smaller birds would still be hunted, but most of the water fowl, such as many species of ducks and geese, would not be present at this time. Cranes and loons appear to be the only other water fowls hunted in the summer and late summer respectively (Wood 1634:52-53). Turtles continued to be hunted in the summer.

Corn, which Winslow noted was "..very deare to them.." in July, was probably used up around this time, and the beans and squash which may have been present in early spring were definitely gone by summer. Green beans and summer squash do begin to ripen and are collected in July and August. Green corn (also known as corn in the milk) is available in August, which, among the Iroquois, is considered a time of celebration. It is not known if the Wampanoag celebrated the ripening of the corn with Green Corn Festivals the way the Iroquois did, or if they only celebrated the harvest later in the year.

Bulrush and cattail roots and bulrush shoots can still be collected during the summer, and bulrush seeds are ready to be harvested, dried and ground into flour in August and September. Cattail pollen can be collected in late July and can be eaten raw, cooked in soup, or roasted and the seeds can be ground into flour. Onion and garlic can be used, the onion especially with fish. Purslane and goosefoot (*Chenopodium*) can also be put into soups or more correctly boiled separately and eaten throughout the summer. Beach plums and blueberries ripen in July and can be harvested and dried at this time, while choke cherries ripen in August and can also be dried.

Mammals seem to have been hunted to only a limited extent in the summer. Deer, bear, otters, and beavers are present in the area year round, and certainly they were hunted in the summer, but fall and winter apparently was the primary time to hunt them. Rabbits and woodchucks would be trapped and hunted, especially if they were caught in the fields.

TAQUONCK (September to November)

In the Fall, subsistence focused on products from the garden and the fall deer hunt. The horticulture which had been practice in southeastern Massachusetts from at least 1100 A.D (900 years ago) provided the people with much of their food in the fall and especially the winter. Corn, which began to be harvested in its milk stage in August, matured in late September and was harvested in October after the plants had died. The corn was thoroughly dried, and some of it was placed in underground storage pits for the winter. Beans were also dried on the vine and stored for the winter, whereas squash may have been sliced in rings or spiral sliced and dried in the sun to use in winter. Small dark green watermelons which are grown in the garden are harvested and eaten as they become ripe. Finally, sunflowers, grown on the edges of the gardens, are harvested now and boiled to remove their oil, which is saved to be used later (See Oils and Grease below).

Certain wild plant species are harvested during the fall as well. Prominent among these are various types of nuts, such as hazel, hickory, beech, butternut, chestnuts and white oak acorns. Some years, more nuts would be harvested than in other years, depending on how well the corn crop had done that year (Williams 1643: 168). The final berries of the season, cranberries and grapes were harvested at this time and eaten fresh or dried.

One of the most important activities of the fall, is the annual deer hunt. Roger Williams stated that "about Harvest, they goe ten or twentie together, and sometimes more, and sets his traps and waits and once every 2 days he checks them." (Williams 1643:224). The deer hunt would allow large amounts of skins and meat to be acquired for the community in a relatively short amount of time. Hunting for other animals also was begun in earnest in this season as well. Josselyn states that bear could be hunted year round but the best time to do so is in acorn time and winter "when he is fat his meat is best" (Josselyn 1674:65). The same is true for beaver and muskrats. Fall was a time to hunt fat animals to get an extra layer of fat on oneself for warmth and starvation protection.

Ducks and geese return around October and as the ocean fishing dwindles with the approach of winter, the hunting of water fowl increased. Fishing continued in the fresh water where fish such as trout, sunfish, carp, catfish and perch were sought.

PAPONE (December to February)

Winter subsistence continued in much the same way that the fall did. Hunting and fresh water fishing provided meat for the family, while their vegetable needs were the crops which had been dried and stored from the previous years planting season. During the late winter into very early spring, a community may be faced with dwindling food supplies. This would be especially if it was a particularly hard and long winter. Corn, beans and squash crops were probably initially cultivated in this area as a way of supplementing the winter food supplies with a reliable and predictable food source. With the approach of spring, families would again begin to look for the spring greens and returning fish as welcome changes from the winter diet, and the cycle begins anew.

PRESERVATION

In order to make a food supply last beyond its seasonality, people the world over uses various techniques to preserve foods. The Wamapnoag in the seventeenth century made use of only one type of technique to preserve their food, dehydration. Many different types of foods were preserved though this means, everything from fish and shellfish to corn, beans and squash.

The drying of shellfish and fish took place in the spring and summer as William Wood observed "In summer these Indian women, when lobsters be in their plenty and prime, they dry them to keep for winter, erecting scaffolding in the hot sunshine, making fires likewise underneath them (by whose smoke the flies are expelled) till the substance remain hard and dry. In this manner they dry bass and other fishes without salt, cutting them very thin to dry suddenly before the flies spoil them or the rain moist them, having a special care to hang them in their smoking houses in the night and dankish weather." (Wood 1634:114). Although he was specifically discussing the drying of lobsters, many of the steps he outlines hold true for other fish and shellfish.

The racks which were used to dry the fish and shellfish on were probably three feet high and 5' x 4' feet wide and long, based on the remains of what is believed to be a drying rack at the Wheeler's site at Morrill Point, Massachusetts. These racks possibly followed the same form as the racks used in Virginia, and possibly here, for roasting (De Bry 1588:59). A fire was kindled beneath these racks with hard wood and allowed to burn down to good hot coals. On top of this was placed fresh green sumac branches, grass, maple and oak leaves, and sweet fern. All of these green plants will produce huge amounts of smoke. The meat to be dried is then placed on the rack and allowed to dry for two to three days until it is hard and dry. In this way, did they dry shad, eels, lampreys, alewives, herring, lobster, oysters, clams, quahogs, and scup. Basically any seafood which could be gathered in large quantities was smoke dried. One final meat which was dried were eggs. Josselyn, in 1672, noted that natives, possibly those further north, boiled eggs until they were very hard, and then dried them. These were

crushed and added to soups to thicken it (See Recipes below) (Josselyn 1672:93).

Vegetable foods did not need to be dried with the use of smoke, they were usually placed on mats on the ground in the sun. Corn was probably the most common vegetable food dried for storage. Roger Williams recorded the process for drying corn in 1643

"they doe carefully upon heaps and mats many dayes, before they barn it up, covering it up with mats at night, and opening when the sun is hot. The woman of the family will commonly raise two three heaps of twelve, fifteen, or twentie bushels a heap, which they dry in round broad heaps; and if she have the help of her children or friends, much more." (Williams 1643: 171). The corn is simply piled up in heaps and allowed to dry during the day. The corn may have been left on the cob to dry this way, or it may have been taken off and the heaps were turned over each morning, so that the whole heaps dries evenly.

Nuts and berries were probably dried in a similar way. Specifically for the Native people in our area, we know through the historical records that they used cherries, strawberries, cranberries, barberries, grapes, blackberries, blueberries, and huckleberries (Williams 1643:169). Archaeologically, raspberries, and hack berry can be added (Wheeler, Greenwich Cove). Among the Iroquois, huckleberries, thimble berries, high bush cranberries, nannyberries, mulberries, elderberries, gooseberries, dewberries, wintergreen, and June berries were also used (Parker 1968:95). It does not appear that all of these were dried for the winter though. The Iroquois dried cherries, blackberries, black raspberries, huckleberries, blueberries, strawberries and elderberries (Parker 1968:97). It is known that in our area, Currants (Attitaash) were dried, and it can be expected that the same berries as were dried by the Iroquois, most probably were dried in this area as well.

Most of these berries could be easily dried by placing the whole berry on bark slabs or pieces of slate (Parker 1968:97). Another Iroquois method for drying, specifically for blackberries, was to dry them on the stalk which was merely broken and allowed to hang on the bush (Parker 1968:97). Parker also notes that smaller "pulpy" berries such as blueberries were dried in shallow basket trays. Strawberries and red raspberries were ground into mush and "with as much juice as the mass would hold placed on basswood leaves on slabs of slate or other flat rocks." (Parker 1968:98). Again, we have not direct reference to the Wampanoag doing this, but it is likely.

The nuts appear to have been shelled and dried out hard to be stored away. The nuts most commonly used were Acorns, Beechnuts, Black Walnuts (which were not too common in our area), Butternuts, Chestnuts and Hickory . Any of the nuts, once gathered were shelled and/ or processed immediately. Hickory nuts may have been dried with the shells on, as they were among the Natives in Virginia. In this case, the whole nut, shell and all, was crushed in a mortar and then all was placed in boiling water and the shells fell to the bottom (Smith 1612:). In other cases, the removal of the shell would have been accomplished using a nutting stone. This is a flat stone with a shallow depression in it to hold the nut in place while it was split. Once the meat was removed, it was crushed in a wooden bowl and thrown into boiling water, the oil skimmed off and the meats dried (Parker 1968:101).

This was also the case for the acorns, which needed special boiling in lye to remove the oils (Williams 1643:168). Following the removal of the oil, the acorns were parched on the hot coals of the fire and then either stored or ground in a mortar and used (Parker 1968:101: De Bry 1588:19). Acorns which had been parched, were placed in baskets and stored in storage pits, to be used in the winter. This is what the colonists discovered on Cape Cod in 1620 (Winslow 1620: 145) Chestnuts were boiled and the meats dried, this is probably what Roger Williams meant when he stated that "The Indians have an art of drying their chestnuts, and so to preserve them in their barnes for a daintie all yeare." (Williams

1643: 168). The drying of the nuts may have been similar to that noted for hickories among the Powhatan in Virginia " Then doe they dry them again upon a mat over a hurdle.." (Smith 1612)

After these foods were dried out, many of the vegetable foodstuffs were placed in storage pits (Auquunnash), what the English termed "barnes". The best description of this is by Thomas Morton in 1637 "They are careful to store food for winter, they eat freely of it but put away a convenient portion to get them through the dead of winter. Their barnes are holes made in the earth, that will hold a hogshead of corn a peece in the. In these (when their corn is out of the husk and well dried) they lay their store in great baskets (which they make of sparke) with matts under, about the sides and on top; and putting it into the place made for it, they cover it with earth.. to be used in the case of necessity and not else." (Morton 1637:42). These are the type of storage pits which the colonists found in 1620 on Cape Cod wherein they found "a bottle of oil, bag of beans...2 to 3 baskets parched acorns" (Winslow 1621:141; 155). As well as several bushels of corn.

Oils/ Grease

Oils and greases were used by the Wampanoag for a variety of purposes. Greases could be used on the body to prevent sunburn, repel mosquitoes, retain heat, and when mixed with charcoal, to darken the hair. Oils and greases were made from various substances such as fish, mammals such as bears, deers, and racoons, birds, such as eagles and geese, nuts such as acorns, hickories and walnuts, and sunflower seeds.

The production of oil from acorns involved a specific process to boil it out. John Josselyn described this process as follows:

Maple- the ashes of this tree the Indians make a lye, with which they force out oyl from oak acorns that is highly esteemed. The natives draw an oyl, taking the rottenest maple wood, which they burnt to ashes, they make a strong lye therewith, wherein they boil their white oak acorns until the oil swim on the top in great quantity, this they fleet off, and put into bladders to anoint their naked limbs; they eat it likewise with their meat, it is an excellant clear oil (Josselyn 1672:47-49). Meats and nuts high in oil and grease were probably favored in the fall, as a means of acquiring a fat layer on ones own body, just as the animals did. It should not be interpreted on site that the Wampanoag diet was low in fat. On the contrary, it appears that they preferred a high fat diet in the fall and winter, which helped them in the lean times of the spring..

Fat to make grease could be acquired from various animal parts including fish livers, strait fat from mammal and bird bodies, and boiled marrow and bones. For example, among the Micmac of Canada, it was noted that when a moose was killed " they collected all the bones of the moose, pounded them with rocks upon another of larger size, reduced them to a powder; then they placed them in their kettle, and made them boil well. This brought out a grease which rose to the top of the water, and they collected it with a wooden spoon. They kept the bones boiling until they yielded nothing more, and with such success that from the bones of one moose, without counting the marrow, they obtained 5-6 pounds of grease as white as snow, and firm as wax. It was this they used as their entire provision for living when they went hunting. We call it Moose butter..." (Denys 1672:118).

This process of extracting the marrow and boiling the bones, while it is not documented for the Wampanoag, is hinted at by the bones from various archaeological sites. The Nook Farm site, located near the Plymouth Library on Nook Road, yielded a large collection of bones when it was excavated by Henry Hornblower in 1940. There was not one complete deer bone among the collection, even the toes and jaws had been broken up by the Native people to extract the marrow.

Natives, as well as the English deemed fat animals to be the best to eat. Some animals were specifically hunted at certain times of the year because they were fat in the winter "Bear caught in acorn time and winter, when he is fat his meat is best." (Josselyn 1672:65). While others were actively sought because of their fat. For example, Williams stated that Bass heads, when boiled yielded an excellent soup, because the "...braines and fat of it being very much, and as sweet as marrow." (Williams 1643:180). Beaver tails were also in this class of foods as it "...proves exceeding good meat, being all fat, and as sweet as marrow (Josselyn 1672:19).

Notes

(Wood 88) He that kills a deer shares

(Williams 104) Whomsoever commeth in when they are eating, they offer them to eat of that which they have, though but little enough prepared for themselves. If any provision of fish or flesh come in, they make their neighbors partakers with them.
If any stranger come in, they presently give him to eate of what they have; many a time, and at all times of the night when nothing hath been ready, have themselves and their wives, risen to prepare me some refreshing.

(Josselyn 93) They have prodigious stomachs, devouring a great deal meer voragoes, never giving over eating as long as they have it, between meals spending time in sleep till the next kettleful is boiled, when all is gone they satidfie themselves with a small quantity of meal, making it serve as a frugal bit ...If they have none of this, as sometimes it falleth out (being very careless people not providing against the storms or want and tempest of necessity) they make use of Sir Francis Drake's remedy for hunger, go to sleep.

Oils/ Grease

(Wood 83) Oil of fish, fat of eagles, grease of racoons rub on skin

(Williams 168) Wusswaquatomineug walnuts Of these walnuts they make an excellant oil good for many uses, but especially for their anointing of their heads.

(Josselyn 1672:47-49) Maple- the ashes of this tree the Indians make a lye, with which they force out oyl from oak acorns that is highly esteemed. The natives draw an oyl, taking the rottenest maple wood, which they burnt to ashes, they make a strong lye therewith, wherein they boil their white oak acorns until the oil swim on the top in great quantity, this they fleet off, and put into bladders to anoint their naked limbs; they eat it likewise with their meat, it is an excellant clear oil

(Josselyn 59) Fox grease used by English for earaches

(Josselyn 61) Wildcat grease used for lameness
Racoon grease for bruises, aches, straines, dislocations

(Josselyn 1672:43) wildcat grease used with dried white hellabore to cure wounds

(Joselyn 65) Bear grease very soverign

(Josselyn 66) Beaver grease very good

(Josselyn 68) Hawk grease very good

(Morton 78) Racoon grease precious for sciattica

Special foods

(Williams 181) Potop Whales; which in some places are oftent cast up,..The natives cut them out in severall parcells, and give and send farre and neere for an acceptable present or dish

(Josselyn 93; 1672 20) Dried moose tongue, which they esteem a dish for a sagamor

(Morton 44) Beaver tail is a present for a sachem

(Morton 77) They burn the beavers tail and is preserved for a dish for the sachems

Mammals used

Racoons

(Morton 78) Flesh is excellant food

Jaccals

(Josselyn 1672:22) some Indians will eat them

(Morton 78) Luzeran (Grey fox), flesh is dainty meat like a lamb

Otters

(Josselyn 67) Taken anytime

(Morton 77) Flesh is eaten by the natives

Bear

(Wood 43) Bear esteemed above venison

(Josselyn 65) Bear caught in acorn time and winter, when he is fat his meat is best

Moose

(Wood 43) not many in Massachusetts Bay, but great store 40 miles north

(Josselyn 98-99) They go 30-40 miles up into the country and run down a moose. When he has tired, they cut his throat and skin him, the women take out the heart, cut off the left rear foot and draw the sinews out, and cut out his tongue and as much venison as will dserve to satiate them. At the same time the men pitch camp near a spring and scrape the snow to the bare earth. In the middle they make a fire near a tree and hang their kettle from one of the branches of the tree and boil the venison...They do not trouble themselves with the horns of the moose or the deer becausethey are weighty and cumbersome. They leave the carcass out there for the wolverines.

(Josselyn 1672) Meat not dry like deer flesh, Flesh of the fawns is an incomparable dish

Deer

(Williams 224) about Harvest, they goe ten or twentie togeher, and sometimes more, and sets his traps and waits and once every 2 days he checks them

(Winslow 145) found two or three deer heads one fresh, in houe on Cape

Foxes

(Josselyn 59) Hunted from September to March

Beavers

(Morton 44) beavers they killed by no allowance

(Morton 77) Flesh is excellant meat

Seasonality

Uses

Whales

(Winslow 153) Saw natives butchering a grampus. They cut it into long rands or

pieces, about an ell long and two handful broad

Birds Used

(Winslow 294) Fowl- the time they continue in plenty with us is from the beginning of October to the end of March, sometimes in May and June.

Pigeon

(Wood 50) Beginning of Spring, Michelmas they are to the south of Boston, but are around yer round to northeast of Boston

(Williams 165) At strawberry time

Turkey

(Wood 51) hunted year round, but are easiest to hunt in winter

Cranes

(Wood 52) Hunted in summer

(Morton 69) Arive at St. David's day not before

Geese

(Wood 52) hunted around Michelmas and return in March

Loon

(Wood 53) hunted in the later end of summer before the geese come in

Fish Used

(Winslow 233) Eels in september and all winter

(Winslow 294) As fowl decreases in March, so the fish increases, and vice versa

Reptiles used

(Josselyn 1672:39) rattlesnakes- The Indians when weary with travelling, will take them up with their bare hands, laying hold with one hand behind their head, and with the other taking hold of the tail, and with their teeth tear off the skin of their backs, and feed upon them alive, which they say refereshes them.

Shellfish used

Lobsters

(Wood 113) Summer women get lobsters for husbands to use meat as bait, this is an every day's walk

(Winslow 205) Residents of Namasket go to plymouth every spring to collect lobsters

(Winslow 214) July saw natives fishing for lobster

Crabs

(Winslow 208) saw woman with roasted crabs and dried shellfish, July 1621

Clams

(Wood 114) In winter they go to clam banks for their belly timber

(Williams 182) Sickissuog Clams This is a sweet kind of shellfish, which all Indians... Winter and Summer delight in; and at low water the women dig for them

Vegetables used

Wild

(Joselyn 93) They feed likewise upon earthnuts or groundnuts, roots of waterlilies, chesnuts, and diverse berries

(Josselyn 1672:44) Indians eat water lily with yellow flowers, which are long a boiling and taste like the liver of sheep

- (Winslow 145) found 2-3 baskets of parched acorns
(Winslow 166) Walnut and hazel trees in Plymouth

Cultivated

- (Winslow 211) Corn very precious at July

Recipes

Documented Wampanoag

- (Winslow 211) Boiled fish
(Winslow 228) Boiled cod in September
(Winslow 212) Roasted fish
(Josselyn 1672:54) Wild leekes, which the Indians use much to eat with their fish
(Williams 100) Nokehick- parch'd meal which is a readie very wholesome food, which they eat with a little water, hot or cold...with a spoonful of this meale and a spoonful of water from the Brooke, have I made many a good dinner or supper.
Aupummineanash the parch'd corne
Aupuminea-nawsaump The parch'd meale boiled with water at their houses, which is the wholesome diet they have
Msickquatash Boiled corn whole
Nasaump A kind of meale pottage, unparch'd From this the English call their samp, which is the Indian corn, beaten and boiled, and eaten hot or cold with milk and butter, which are mercies beyond the Natives
plaine water
(Williams 101) Puttuckqunnege a cake
Puttuckqunnegunash puttuckqui Cakes or loaves round
(Williams 169) Wuttahimneash Strawberies The Indians bruise them in a mortar, and mixe them with meale and make strawberry bread
Sautaash are these currants (hurtleberries/ Attitaash) dried by the natives, and so preserved all the yeare, which they beat to powder, and mingle it with their parched meale, and make a delicate dish which they call sautauthig; which as sweet to them as plum or spice cake to the English
They also make great use of their strawberries having such abundance of them, making strawberry bread, and having no other food for many days..
(Williams 180) Uppaquontup basse heads boiled. The braines and fat of it being very much, and as sweet as marrow
(Williams 182) Clams: this fish and the natuall liquor of it, they boile, and it makes their broth and their nasaump (which is a kind of thickened broth) and their bread seasonable and savory, in stead of salt.
(Josselyn 93) Lobsters roasted
(Josselyn 93) Hard eggs boiled and made small and dryed to thicken their broth with
Their indian corn and beans they boil, and sometimes eat their corn parched and roasted in the ear against the fire
They beat their corn to powder and put it up into bags, which they make use of when stormie weather or the like will not suffer them to look out for ther food
(Josselyn 99) During the moose hunt they boil up the moose meat, the men take out their bags and take out as much indian meal as will serve their turns..they eat their broth with spoons, and their flesh they divide into gobbets, eating now and then with it as much meal as they can hold betwixt three fingers, their drink they fetch from the spring

- (Josselyn 73) Cormorants: Indians will eat them when they are flayed
- (Josselyn 1672:19) Beaver tails with skin flayed off and boiled proves exceeding good meat, being all fat, and as sweet as marrow
- (Morton 43) These people have begun already to incline to the use of salt. Many of them would begg salt of mee for to carry home with them
- (Morton 56) Flesh of beasts they both roast and boil
- (Gookin 1674:10) Their food is generally boiled maize or Indian corn, mixed with kidney-beans, or sometimes without. Also they frequently boil in this pottage fish and flesh of all sorts, either taken fresh or newly dried These they cut in pieces, bones and all, and boil them in the aforesaid pottage. I have wondered many times that they were not in danger of being choked with fish bones; but they are so dexterious to seperate the bones from the fish in their eating therof, that they are in no hazard. Also they boil in this furmenty all sorts of flesh, they take in hunting; as venison, beaver, bear's flesh, moose, otters, rackoons, or any kind that they take in hunting; cutting this flesh in small pieces, and boiling as aforesaid. Also they mix with the said pottage several sorts of roots; as Jerusale artichokes, and ground nuts, and other roots, and pompions, and squashes, and also severall sorts of nuts or masts, as oak acorns, chestnuts, walnuts; these husked and dried, and powdered, they thicken their pottage therewith.
- (Gookin 1674: 10) Also sometimes they beat their maize into meal, and sift it through a basket, made for that purpose. With this meal they make bread, baking it in the ashes, covering the dough with leaves.
- (Gookin 1674:10) Sometimes they make of their meal a small sort of cakes, and boil them. They make also a certain sort of meal of parched maize. This meal they call nocake. It is so sweet, toothsome, and hearty, that an Indian will travel many days with no other food but this meal, which he eateth as he needs, and after it drinketh water. And for this end, when they travel a journey, or go a hunting, they carry this nocake in a basket or bag for their use. (Sweet because they mix dried currants with it ? see Williams)

Axtell, 1981

Micmac, 1672 Denys

114: "They killed animals only in proportion as they had need of them. When they tired of eating one sort they killed some of another. If they do not wish longer to eat meat, they caught some fish. They never made an accumulation of skins of Moose, Beaver, Otter, or others, but only so far as they needed them for personal use. They left the remainder where the animals had been killed, not taking the trouble to bring them to their camps."

116: "But in those times they killed only their provision, and they only went hunting in proportion as they had need of meat. All their hunting and fishing were done only as they had need for food."

"The hunting of Beavers took place in summer with arrows, when they were taken in the woods, or else in the lakes and ponds...But the commonest and most certain way was to break their dams, and make them lose the water.

"As to the bones, they (the dogs) are not given any, for fear of damaging their teeth, not even those of the Beaver. If they should eat of that, it would keep the Indians from killing any, and the same if one were to burn them....The Indians had many superstitions about such things, of which it has been much trouble to disabuse them. If they had roasted an Eel, they also believe that this would prevent them from catching one another time."

117: winter Beaver fishing took place by cutting holes in the ice and having hunters waiting with bows and arrows at these holes while another hunter sticks his arm into the hole at the mouth of the den. He pulls some out and kills them with a hatchet while the others kill those which swim out of the den.

"Few in a house are saved: they would take all. The disposition of the Indians is not to spare the little ones any more than the big ones. They killed all of each kind of animal that there was when they could capture it. It is well to remark here that they were more fond of the young than of the grown of various species of animals...to such a degree that when they are chasing two Elks, male and female, they quitted the male if they perceived that the female was pregnant, in order to obtain the young ones...it is for them a great dainty."

118: "The work of the women was to go fetch the animal after it was killed, to skin it, and cut it into pieces for cooking. ..they collected all the bones of the moose, pounded them with rocks upon another of larger size, reduced them to a powder; then they placed them in their kettle, and made them boil well. This brought out a grease which rose to the top of the water, and they collected it with a wooden spoon. They kept the bones boiling until they yielded nothing more, and with such success that from the bones of one moose, without counting the marrow, they obtained 5-6 pounds of grease as white as snow, and firm as wax. It was this they used as their entire provision for living when they went hunting. We call it Moose butter.."

"Any kind of wood was good for the kettle, since that was always outside the wigwam."

Cooking Utensils

Dishes

(Trumbull) Wisq- the name of any dish or vessel made from a gourd

(Williams 121) Wunnaug- tray/ dish/ bowl

Kunam- Spoon

Wunnauganemese- little tray

Pots:

(Gookin 1674:11) Their household stuff is but little and mean.

(Winslow 1622: 144).found earthen pots and English pail without bail

(Trumbull 339) Ohkuk

(Williams 103) Aucuck

Mishquockuk- Red Copper Kettle (Great pot)

(Josselyn 101)Kettles of birch bark which they used before they traded with the French for copper (birch bark probably not as common down here as up north)

(Winslow 133) found a great kettle like a ship's kettle at Cape Cod at a moved house

Bowls:

(Morton 41) Dainty wooden bowls of maple, high priced amongst them

(Josselyn 101)Dishes, spoons and trays wrought very smooth and neatly out of knots of wood

(Winslow 144) Found wooden bowls, trays, and dishes

Mortar

(Williams 121) Tackunck/ weskhunck

Fire Equipment Cooking Methods

(Gookin 1674:10) newly dried, as shads, eels, alewives or a kind of herring, or any

other sort of fish. But they dry mostly those sorts before mentioned.

(Williams 181) Mishcup/ sequanamauquonck Breame Of this fish there is abundance, which the natives drie in the Sunne and smoke and some English begin to salt; both ways they keepe all yeare

(Winslow 191) March 1621 were given a red herring newly taken and dried

(Josselyn 93) Dried oysters, lobsters dried in the smoke

(Morton 90) The natives will meet 500-1000 at a place where lobsters come in with the tide to eat, and save dried for store, abiding in that place, feasting and sporting a month or 6 weeks

(Winslow 155) Found in ground

(Williams 168) Anaunchemineash Acorns Thse acorns also they drie, and in case of want of Corne, by much boiling they make a good dish of them; yea sometimes in plentie of Corne doe they eate these acorns for a novelty.

(Williams 171) Auqunnash Barnes
Necawnauquanash Old barns

Champlain (1967)

74: Cape Cod " When they eat their indian corn, they boil it in earthen pots, which they make in a way different from ours. They bray it also in wooden moirtars and reduce it to powder, of which they then make cakes..."

141: "a large number of savages were encamped in cabins near us, engaging in fishing for eels, which begin to come about the 15th of Setember and go away on the 15th of October. During this time , all the savages subsist on this food, and dry enough of it for the winter to last to the month of February...when the eels and other things which they dry have been prepared, they go and hunt for the beaver until the beginning of January."

246: a feast or tabagie on the Ottawa River. "The next day all the guests came, each with his own porringer and wooden spoon. They seated themselves without order or ceremony on the ground ...who distributed to them a kind of broth made of maize crushed between two stones, together with meat and fish which was cutt into little pieces, the whole being boiuled without salt. They also had meat roasted on coals, and fish boiled apart..."

298-99: "in 38 days ..they captured 120 deer...reserving the fat for winter, as we do butter."

314: " The principle article of food are Indian corn and Brazilian beans, which they prepare in various ways. By braying in a wooden mortar they reduce the corn to meal. They remove the bran with fans madeof the bark of trees. From this meal they make bread, using also beans which they first boil, as they do the indian corn for soup, so that it may be more easily crushed. Then they mix all together, sometimes adding blueberries or dry reaspberries, and sometimes pieces of deer fat...After steeping the whole in lukewarm water, they make bread in the form of bannocks or pies, which they bake in the ashes. After they are baked they wash them, and from these they often make others by wrapping them in corn leaves, which they fasten to them, and then put them in boiling water.

But this is not their most common kind. They make another, which they call migan, which is as follows: They take the pounded Indian corn, withot removing the bran, and put two or three handfults of it in an earthen pot fullof water. This they boil, stirring it from time to time, that it may not burn nor adhere to the pot. Then they put in a pot a small quantity of fish, fresh or dry, according toseason, to give a flavor...After it is cooked, they take out the fish, pound it very fine, and then put it altogether into the pot, not taking the trouble to remove the appendages, scales or inards, as we do, which generally causes the bad taste

Archaeological Evidence

Wheeler Site

Season Occupied: June to November

Fish: (Early September to late October)

| | |
|----------|----|
| Sturgeon | 2 |
| Cod | 11 |
| Pollock | 2 |
| Haddock | 5 |

Turtle: Painted 1

Frog/Toad: 1

Bird: Great Auk 1

Heath Hen 1

Turkey 3

Passenger Pigeon 1

Mammals: (Deer- July through November)

Deer- 3 adult bucks, 5 adult does and
young bucks, 3 juveniles. All ages and sexes, no selection

Chipmunk 5

Woodchuck 1

Squirrel 1

Beaver 2

Muskrat 1

Dog 1

Bear 1

Raccoon 1

Seeds: Frost Grape

Fox Grape

Black Raspberry

Flowering Raspberry

Raspberry

Hackberry

Bayberry

Nuts: Hickory

Oak

Greenwich Cove Site

Season: Winter

Shellfish: (Late Woodland Occupation)

| | |
|-----------------|------|
| Quahog | 155 |
| Oyster | 666 |
| Soft shell clam | 1597 |
| Bay Scallop | 41 |
| Ribbed Mussel | 8 |
| Whelk | 5 |
| Boat Shell | 0 |

Fish: Sand Shark 1

Shark 1

| | | |
|-----------------------------|---|---|
| Tautog | 2 | |
| Sea Robin | 3 | |
| Weakfish | 3 | |
| Turtle: Stinkpot | 0 | |
| Reptile: Garter Snake | 1 | |
| Bird: (Late Woodland) | | |
| Turkey | 2 | |
| Sandhill Crane | | 1 |
| Razorbill | 0 | |
| Thick-Billed Murre | 1 | |
| Hawk | 0 | |
| Mammals: (Late Woodland) | | |
| Deer | 3 | |
| Chipmunk | 3 | |
| Squirrel | 2 | |
| Beaver | 0 | |
| Rabbit | 1 | |
| Raccoon | 1 | |
| Bear | 0 | |
| Marten | 1 | |
| River Otter | 1 | |
| Skunk | 0 | |
| Dog/Wolf | 1 | |
| Red Fox | 1 | |
| Gray Fox | 1 | |
| Seeds: | | |
| Sumac | | |
| Chenpods | | |
| Bulrsh | | |
| Wild Grape | | |
| Solomon's Seal | | |
| Smartweed | | |
| Pigweed | | |
| Wild rice (Middle Woodland) | | |
| Bedstraw | | |
| Black Raspberry | | |
| Partridge Berry | | |
| Cherry | | |
| Nuts: | | |
| Hickory | | |
| Acorn | | |
| Hazelnut | | |

Lambert farm

Season: Summer to winter

Fish: Sturgeon
Tautog
Cod
Shark

Mammals: Deer- juvenile to older adults, some late winter
Canine
Moose
Raccoon
Muskrat

Birds: Turkey
Duck

Turtle: Box

PI-102 (Nook Farm)

Season: Summer to Fall (From the habits availability of certain species and the presence of an antlered male deer) Possibly occupied just prior to the winter move inland

Mammals: Deer: (one antlered male late summer to early winter)
8, 1 old, 1 young, 6 middle age
Beaver: 1
Dog: 2 (1 old 1 young)
Skunk: 1
Red Fox: 1

Reptiles:

Painted Turtle: 1 April to October

Birds:

Turkey: 6 (one very large) at least 2 males
Goose: 11
Duck 3

Fish:

Sturgeon: 1 (May to July)
Haddock: 1 (Year round)
Cod 2, 1 Large, 1 small (January to June, October to November)

(1)Nook Farm Garden (19-PL-532)

Faunal remains 244

Bone tools 8

Bone ornament 1

(2)Nook Farm Plymouth (19-PL-102)

Faunal remains 1008

Bone tools 17

Shell 28

charcoal 39

Charred nuts 8

(3)Browne site Plymouth (19-PL-76)

Bone tools 67

Faunal remains 149
Shell 19

(4)Sand Bank Shell Midden (19-PL-71)

Faunal remains 33
Shell 134
Ceramics 479
Bone tools 9
charred wood 23

(7)H. Davis Site Plymouth (19-PL-98)

Bone tools 5
Faunal remains 6

(8)Nat Ellis' Plymouth (19-PL-82)

Faunal remains 4

(9)Great Herring Pond Plymouth (19-PL-179)

Faunal remains 4

(11)J. Finney site Plymouth (19-PL-73)

fish vertebra 2

(12)South Bog Pond Plymouth (19-PL-533)

faunal remains 2

(13)Brewster site Plymouth (19-PL-506)

Faunal remains 1

(14)Eel River Farm Plymouth (19-PL-521)

Faunal remains 1
Bone tools 1

(5)Peach Orchard (19-PL-)

Faunal remains 10
Bone tools 8

(6)Bay farm Duxbury Knigston (19-PL-45)

Faunal remains 6
Bone tools 2

(10)Henderson's Union Bridge Norwell (19-PL-24)

Faunal remains 3
Shell 1

Concord shell heap 4,400ya

Largy 1995
92% mammal

Deer

Frontal bone of very young fawn, newborn or fetal
96% of all deer born between May 24 and June 8

Muskrat

Beaver

Both axial and appendicular elements present, whole animals brought to site

Squirrel

Woodchuck

Raccoon

Dog

5% bird

Turkey

2.6% fish

Chain pickerel

Catfish

Fallfish (*Semotilus corporalis*)

.3% snake

Water snake: March 3-November 3

Turtle Remains from the Concord shell heap

Rodin, Anders G. J. 1995

Stinkpot/ Musk April to October

Painted April to October

Redbelly April to October

Snapping April to October

Wood April to October

Blanding's March to October

Box April to October

Spotted March to October

Howland Orchard Shell Midden 2450-Contact

Tonya Largy 1995

Immature birds mid-late June

Raccoon

Beaver Second most common

Deer Dominant

Skunk Articulated (natural death)

Chipmunk

Woodchuck

Gray Fox

Turkey

Duck