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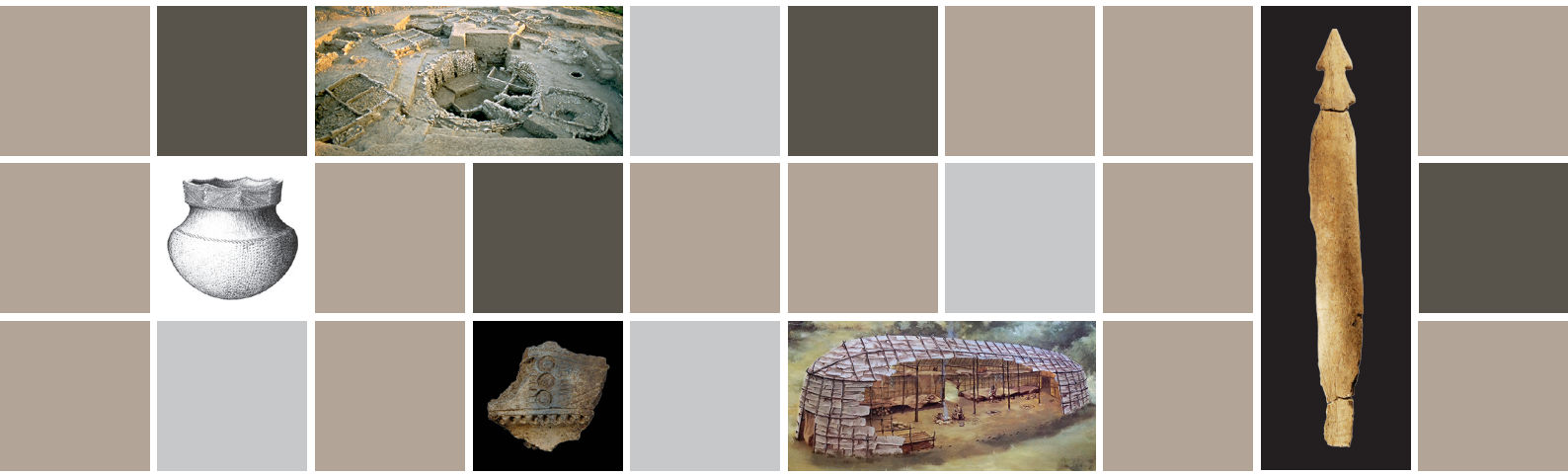
HOUSEHOLD ARCHAEOLOGY

A Transatlantic Comparative Approach



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THE FAUNA EXPLOITED BY THE HOUSEHOLDS AT THE MAILHOT-CURRAN SITE (BGFN-2)

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THE FAUNA EXPLOITED BY THE HOUSEHOLDS AT THE MAILHOT-CURRAN SITE (BGFN-2)

Claire ST-GERMAIN, Michelle COURTEMANCHE

Abstract

The Mailhot-Curran site yielded a total of 27364 vertebrate skeletal remains. Some forty species were identified among these remains. The Iroquoian villagers concentrated their diet on fish, but also counted on mammals, birds and reptiles to complement their subsistence which relied primarily on agricultural production. The analysis of the horizontal spatial distribution of skeletal remains between various sectors of the site comprised by six longhouses and three middens sheds light on the relative homogeneity of faunal resources distribution within this community.

Keywords

Northeastern North America, zooarchaeology, Late Woodland, Saint Lawrence Iroquoians.

Introduction

The analysis of faunal skeletal remains at the Mailhot-Curran site has allowed us to measure the importance of fish and game resources for the Iroquoian villagers (see further details of this analysis in St-Germain, Courtemanche, 2015). Several animals seem to have been selected, in particular certain fish species (tables 1-3). Beyond the preferences brought to light by the zooarchaeological analyses, it is relevant to evaluate the relative homogeneity, or the contrary, a relative heterogeneity in the distribution of animal resources between various domestic components of the site[1]. A comparison between the content of six longhouses, and in particular longhouses # 1 to # 4, and three middens provides us the possibility to question differential patterns in the faunal exploitation between the village's households.

Regarding the households, the reason we have selected longhouses # 1 and # 2, and to a lesser degree longhouses # 3 and # 4, was partially dictated by a more extensive archaeological intervention in those longhouse areas. Excavations inside the selected residences account for an average of over 50 % of the estimated floor area (Chapdelaine, 2015b: 33). However, as excavation details reveal, the excavation coverage for each residential structure is variable (table 4). The uneven faunal samples therefore affect the statistical representativeness of the fauna in the domestic units (table 4). For the pairing between longhouses and middens, we are using the associations proposed by Chapdelaine (2015b): longhouse # 1 with the southwest midden, and longhouse # 2 with the northwest midden.

1. For a map of the site and the detailed description of the site components, see chapter six in Chapdelaine, 2015a and his article in this volume, p. 95-109.

FISHES		NSP (%) 15 495 (56.57 %)
Lake sturgeon	*Acipenser fulvescens*	120
Longnose gar	*Lepisosteus osseus*	1
Mooneye	*Hiodon tergisus*	14
American eel	*Anguilla rostrata*	672
Cypriniformes		37
Fallfish	*Semotilus corporalis*	24
Fallfish / creek chub	*Semotilus spp.*	3
Suckers / redhorses	Catostomidae	430
White sucker / longnose sucker	*Catostomus spp.*	18
White sucker	*Catostomus commersonii*	1
Redhorses	*Moxostoma spp.*	69
Silver redhorse	*Moxostoma anisurum*	16
Shorthead redhorse	*Moxostoma macrolepidotum*	3
Catfishes	Ictaluridae	104
Brown bullhead	*Ameiurus nebulosus*	81
Channel catfish	*Ictalurus punctatus*	72
Stonecat	*Noturus flavus*	1
Pikes	Esocidae	51
Northern pike	*Esox lucius*	266
Muskellunge	*Esox masquinongy*	1
Salmonids	Salmonidae	6
Ouananiche / Atlantic salmon	*Salmo salar*	85
Brook trout	*Salvelinus fontinalis*	10
Burbot	*Lota lota*	6
Perciformes		3 607
Temperate basses	Moronidae	2
Sunfishes and basses	Centrarchidae	46
Rock bass	*Ambloplites rupestris*	24
Pumpkinseed	*Lepomis gibbosus*	15
Largemouth / smallmouth bass	*Micropterus spp.*	1
Smallmouth bass	*Micropterus dolomieu*	43
Perches	Percidae	14
Yellow perch	*Perca flavescens*	2118
Sauger / walleye	*Sander spp.*	77
Indeterminate fish		7 457

Table 1 - Fauna from Mailhot-Curran (BgFn-2): Fish (NSP = total number of specimens).

MAMMALS		**NSP (%) 6629 (24,20%)**
Shrew family	Soricidae	3
Mole family	Talpidae	5
Rabbit / hare	Leporidae	69
Snowshoe hare	*Lepus americanus*	7
Indeterminate rodent	Rodentia	26
Chipmunk / woodchuck / squirrel	Sciuridae	65
Eastern chipmunk	*Tamias striatus*	68
Woodchuck	*Marmota monax*	24
American red squirrel	*Tamiasciurus hudsonicus*	2
Beaver / porcupine (big rodent)		20
American beaver	*Castor canadensis*	272
Mouse / muskrat / vole	Cricetidae (Muridae)	4
Mouse / vole	Cricetinae	14
Muskrat	*Ondatra zibethicus*	85
American porcupine	*Erethizon dorsatum*	5
Indeterminate carnivore	Carnivora	60
Coyote / wolf / dog / fox	Canidae	2
Coyote / wolf / dog	Canis *spp.*	9
Black bear	*Ursus americanus*	49
Raccoon	*Procyon lotor*	30
Marten / fisher / mink / otter	Mustelidae	13
American marten	*Martes americana*	12
Fisher	*Martes pennanti*	3
Mink	*Neovison vison*	1
Northern river otter	*Lontra canadensis*	7
Indeterminate artiodactyl	Artiodactyla	58
Caribou / deer / moose / wapiti	Cervidae	184
White-tailed deer	*Odocoileus virginianus*	357
Moose	*Alces americanus*	1
Indeterminate mammal		5 174

Table 2 - Fauna from Mailhot-Curran (BgFn-2): Mammal (NSP = total number of specimens).

BIRDS		**NSP (%) 239 (0.87 %)**
Grebe family	Podicipedidae	4
Loon family	Gaviidae	9
Swan / goose / duck	Anatidae	2
Indeterminate goose	Anserinae	1
Indeterminate duck	Anatinae	6
Mallard / black duck		1
Indeterminate raptor		1
Indeterminate eagle	Accipitridae	4
Grouse / ptarmigan	Tetraoninae	74
Sandpiper / plover / gull	Ciconiiforma	1
Pigeon / dove	Columbidae	7
Passenger pigeon	*Ectopistes migratorius*	19
Owl family	Strigidae	1
Woodpecker family	Picidae	3
Passeriformes	Passeriforma	8
Jay family	Corvidae	1
Indeterminate bird		97
AMPHIBIANS		**93 (0.34 %)**
Mudpuppy	*Necturus maculosus*	1
Eastern American toad	*Anaxyrus americanus*	30
Indeterminate frog	*Lithobates spp.*	28
Bullfrog	*Lithobates catesbeianus*	2
Toad / frog		32
REPTILES		**8 (0.03 %)**
Common snapping turtle	*Chelydra serpentina*	4
Indeterminate turtle		3
Indeterminate snake	Colubroidae	1
INDETERMINATE ALL CLASSES		**4 900 (17,89 %)**
	TOTAL FAUNA FOR THE SITE	**27 364 (100,00 %)**

Table 3 - Fauna from Mailhot-Curran (BgFn-2): Bird, Amphibian, Reptile and Indeterminate (NSP = total number of specimens).

% excavated	70 %	65 %	40 %	33 %	< 16 %	10 %	70 %	50 %	90 %	
	LH1	LH2	LH3	LH4	LH5	LH6	NWM	DCW	SDW	
ANIMAL CLASS										**Total**
Fishes	5 451 (88.6 %)	160 (11.7 %)	325 (29.7 %)	263 (37.4 %)	177 (35.8 %)	24 (13.3 %)	865 (53.6 %)	4 659 (81.1 %)	3 277 (72.3 %)	**15 201**
Amphibians	21 (0.3 %)	5 (0.4 %)	21 (1.9 %)	14 (2 %)	3 (0.6 %)	0	1 (< 0.1 %)	4 (< 0.1 %)	19 (0.4 %)	**88**
Reptiles	0	1 (< 0.1 %)	0	0	0	0	6 (0.3 %)	0	1 (< 0.1 %)	**8**
Birds	40 (0.7 %)	2 (0.1 %)	14 (1.3 %)	4 (0.6 %)	3 (0.6 %)	3 (1.7 %)	38 (2.3 %)	30 (0.5 %)	97 (2.2 %)	**231**
Mammals	637 (10.4 %)	1 201 (87.7 %)	735 (67.1 %)	424 (60 %)	311 (63 %)	154 (85 %)	704 (43.6 %)	1051 (18.3 %)	1 135 (25 %)	**6 352**
TOTAL	**6 149**	**1 369**	**1 095**	**705**	**494**	**181**	**1 614**	**5 744**	**4 529**	**21 880**

Table 4 - Distribution of animal classes by longhouse and midden (NSP and %); highlighted cells indicate the dominant animal class within a structure; % excavated per structure is shown at the top of the table (LH1 to LH6: longhouses; NWM: north-west midden; CWM: central-west midden; SWM: south-west midden) (NSP = total number of specimens).

The total number of specimens (NSP) by vertebrate classes distributed between the six longhouses and the three middens is shown in table 4[2]. It is obvious that fishes are dominant in well-excavated domestic units (longhouse # 1 and all three middens). Mammals are more numerous in longhouse # 2, which contains less faunal remains than longhouse # 1, but has an interior surface excavated at 65 %. In the other longhouses, mammals are dominant, but their floor area was excavated below 40 % of total.

The study of each household faunal content and their associated middens will be carried out using primarily the identified remains (NISP)[3]. We start the analysis with the most dominant faunal group in the villagers' diet: fish.

1 - Fishery products

More than half the skeletal remains found during excavations at Mailhot-Curran are fishes (NSP = 15 495), which confirm the importance of fishing at the site. At least twenty local freshwater species were captured, except maybe for the ouananiche, the freshwater version of the Atlantic salmon, which will be discussed later on. The fishery efforts seem to have been concentrated, however, on a few species (table 1), the yellow perch being the most important and the American eel in second place. The catostomids, fishes with a good yield, are in third position. This family comprises eight freshwater species in Québec, all to be found in the area of Lake Saint François located 10 km north of the site, but they are difficult to differentiate at the osteological level. Because of this difficulty, only three species could be formally identified: silver redhorse, shorthead redhorse and white sucker. A few remains attributed to the genus *Moxostoma*, which corresponds to various species of redhorses present in the region's water, could be associated with the greater redhorse (*Moxostoma valenciennesi*). It is worth mentioning this fish species because it is not among

2. The specimens found outside the domestic structures and the Indeterminate faunal remains are excluded from the total (NSP = 21 880).
3. The identified remains are those determined to Order and lower (taxa more precise than Class).

the species currently registered in Lake Saint François (Armellin *et al.*, 1994; Mongeau, 1979), but it is part of the fish inventory of the Châteauguay River (Mongeau *et al.*, 1979). The presence of this greater redhorse seems to support the idea formerly proposed by Chapdelaine that the Mailhot-Curran inhabitants were exploiting the Châteauguay River regularly as well as Lake Saint François (Chapdelaine, 2015a: 40). This proposition is also supported by the presence of the brook trout in the assemblage of fish remains, a species found essentially in an affluent of the Châteauguay River, namely the Trout River.

The northern pike and some members of the ictalurids (brown bullhead and channel catfish) complete the list of the most captured fish species. Other species such as the lake sturgeon, the burbot, the mooneye and members of the centrarchids are considered marginal.

Regarding the yellow perch, we should add several skeletal remains classified in the percids because they are not diagnostic at the species level (table 1), but could have been assigned to the yellow perch to augment its importance in the diet.

Two salmonid species, the brook trout and the Atlantic salmon (either ouananiche, the land-locked salmon, or even the anadromous form) have been recognized in the fish assemblage. The ouananiche, presently absent, was found throughout the 19th century in Lake Ontario located 220 km west of our site, and in its nearby tributaries (COSEWIC, 2006; Courtemanche, 2006). The presence of salmon could be explained by a network of exchanges between various communities, a possibility to consider in the archaeological context, or conversely by a very large exploitation area for the Mailhot-Curran inhabitants. However, a wider geographic distribution for this species in the past can also be used as a possible explanation for landlocked salmon or the anadromous Atlantic salmon during its spawning run.

Several of the identified species could have been captured with a variety of fishing techniques. The ethnohistorical literature of New France is full of examples of fishing methods observed among many Aboriginal groups. A rough outline has been drawn on Iroquoian fishing methods between 1600 and 1792 (Recht, 1995). Various capture methods were recorded: net, harpoon, line with fishhook, basket fishing, etc. We must note, however, that not a single tool found at the site was firmly identified to fishery (Chapdelaine, 2015c; Gates St-Pierre, Boisvert, 2015). Gates St-Pierre and Boisvert (2015: 284) mention the presence of harpoons but they make the remark that their size is not compatible with the small size of the captured species. Having said that, fishing activities may have been carried out at satellite camps located near good fishing spots, the village being established several kilometers away from promising rivers. Finally, a highly productive fishing technique such as basket fishing, that is made of perishable material which leaves few archaeological traces, may have been used. Incidentally, numerous species at the site, such as yellow perch, centrarchids, northern pike, catastomids and American eel are fishes that could be captured with basket fishing techniques by the experienced fisher. Likewise, a fishing technique derived from basket fishing, hoop net fishing, is still used today by commercial fishermen of the area (Armellin *et al.*, 1994). This highly productive fishing technique allows for the capture of the same species found within the faunal assemblage at Mailhot-Curran (Mongeau, 1976).

Is it possible that the distribution of fish remains among the site's components can indicate marked differences within the Iroquoian village? Table 5 resumes the identified specimens per taxa for fish. Not surprisingly, among the longhouses, it is longhouse # 1 that is the richest in fish remains. Two interior pits rich in fish remains (features # 25 and # 9) contain more than 3 000 bones which are mostly identifiable to a fish category contribute significantly to the importance of longhouse # 1. In descending order of importance, longhouse # 3 is followed by longhouses # 4, # 5, # 2, and finally # 6 which is the least excavated within the village. The central-west midden, probably associated with longhouse # 5, is the richest in number of fish remains, followed by the southwest midden linked to longhouse # 1 and by the northwest midden associated with longhouse# 2.

TAXA	LH1	LH2	LH3	LH4	LH5	LH6	NWM	DCW	SDW	TOTAL
Lake sturgeon	17	7	9	1	5	2	21	55	2	**119**
Longnose gar			1							**1**
Mooneye	5							1	8	**14**
American eel	104	7	13	4	11	1	74	271	176	**661**
Cypriniformes	17		1					16	3	**37**
Fallfish	3	2	1		1		2	8	1	**18**
Fallfish / creek chub							2		6	**8**
Suckers or redhorses	81	3	7	4	7	2	31	118	86	**339**
White sucker / longnose sucker	6						1	10	1	**18**
White sucker								1		**1**
Redhorses	9	2	2	2	1		4	26	22	**68**
Silver redhorse	2						1	6	6	**15**
Shorthead redhorse			1				2			**3**
Catfishes	5	2	2		2		12	36	40	**99**
Brown bullhead	1	1			1		5	31	40	**79**
Channel catfish	4		1	1	1	1	4	37	24	**73**
Stonecat	1									**1**
Pikes	3					1	6	18	22	**50**
Northern pike	43		2	1	3		17	80	117	**263**
Muskellunge									1	**1**
Salmonids	2						2	1		**5**
Ouananiche / Atlantic salmon	17		1		1		11	43	9	**82**
Brook trout		1					5	2	2	**10**
Burbot		4						2		**6**
Perciformes	710	6	27	25	8	5	83	371	331	**1 566**
Temperate basses					1					**1**
Sunfishes and basses	1			1	1		2	26	15	**46**
Rock bass	1				1			14	8	**24**
Pumpkinseed	5							2	7	**14**
Largemouth / smallmouth bass								1		**1**
Smallmouth bass	11	2	1				6	7	15	**42**
Perches	10								3	**13**
Yellow perch	491	15	74	51	38		134	701	548	**2 052**
Sauger / walleye	4	1	4				2	48	18	**77**
TOTAL	**1 553**	**53**	**147**	**90**	**82**	**12**	**427**	**1 932**	**1 511**	**5 807**

Table 5 - Fish distribution by site components (NISP by taxonomic order) (LH1 à LH6: longhouses; NWM: northwest midden; CWM: central-west midden; SWM: southwest midden) (NISP = number of identified specimens).

Table 6 offers a summary of all the fish species identified to taxa for the site components. A total of 5 807 skeletal remains, excluding fish scales and undetermined fish remains, were distributed between the six longhouses and the three middens. It is longhouse # 1 that contains the largest number and diversity of identified taxa (N = 25); longhouses # 3 and # 5 have respectively 16 and 15 determined taxa, while longhouse # 2 contains thirteen taxa, longhouse # 4 nine taxa, and longhouse # 6 six taxa. The central-west midden contains 27 taxa, the southwest midden 26 taxa and the northwest midden 22 taxa.

In short, yellow perch, American eel, various species of the catostomids, and northern pike are the most abundant in all components. Some species are scarcer such as the mooneye, the burbot, and the longnose gar. The major fish species identified seem to be homogeneously and systematically present in each of the studied components. By condensing the data for the taxa (table 6) it is easier to perceive this homogeneity by regrouping various species into larger groups.

TAXA	LH1	LH2	LH3	LH4	LH5	LH6	NWM	DCW	SDW	TOTAL
Lake sturgeon	17	7	9	1	5	2	21	55	2	**119**
Longnose gar			1							**1**
Mooneye	5							1	8	**14**
American eel	104	7	13	4	11	1	74	271	176	**661**
Cypriniformes	118	7	12	6	9	2	43	185	125	**507**
Catfishes	11	3	3	1	4	1	21	104	104	**252**
Pikes	46		2	1	3	1	23	98	140	**314**
Salmonids	19	1	1		1		18	46	11	**97**
Burbot		4						2		**6**
Perciformes	1 233	24	106	77	49	5	227	1170	945	**3836**
TOTAL	**1 553**	**53**	**147**	**90**	**82**	**12**	**427**	**1 932**	**1 511**	**5 807**

Table 6 - Distribution of fish groups by site components (NISP by taxonomic order) (LH1 to LH6: longhouses; NWM: northwest midden; CWM: central-west midden; SWM: southwest midden) (NISP = number of identified specimens).

Lastly, the comparison of faunal contents from longhouse # 1 and its southwest midden and longhouse # 2 with its northwest midden on one side, and, on the other side, the contents of longhouses # 3 and # 4 does not support the idea that fish remains were differentially distributed between these households (table 7). Only the accentuated presence of salmonids in longhouse # 1 (NISP = 19), including salmon, a fish that was certainly valued (Recht, 1995) and that may have been obtained from elsewhere, seems to provide a slight variation in the overall homogeneity of distribution. In any case, this hypothesis must be nuanced because longhouses # 3 and # 4 are not yet associated with middens in which skeletal remains of salmon could be present in greater.

To conclude, the fishing activities at Mailhot-Curran do not convincingly support any marked contrasts between the village's household components. To follow up on this point, we must now look at what we can learn from the hunting and trapping activities at Mailhot-Curran.

TAXA	LH1	SWM	LH2	NWM	LH3	LH4
Lake sturgeon	X	X	X	X	X	X
Longnose gar					X	
Mooneye	X	X				
American eel	X	X	X	X	X	X
Cypriniformes	X	X	X	X	X	X
Catfishes	X	X	X	X	X	X
Pikes	X	X		X	X	X
Salmonids	X	X		X		
Ouananiche / Atlantic salmon	X	X		X	X	
Brook trout		X	X	X		
Burbot		X	X			
Perciformes	X	X	X	X	X	X
Yellow perch	X	X	X	X	X	X

Table 7 - Comparison of fish groups within longhouses LH1 and LH2 and their middens (SWM: southwest midden and NWM: northwest midden), and within longhouses LH3 and LH4.

2 - Hunting products

The Mailhot-Curran villagers captured a large variety of animals. However, some inventoried species may be intrusive such as insectivores (some moles), some small rodents (mouse or vole), and frogs, although we should not rule out entirely their contribution to the diet.

For the entire site, mammals provide less than one quarter of all skeletal remains (table 2). A total of 1 366 skeletal remains were identified to Order and lower, which corresponds to 85.3 % of all the determined mammal, bird, reptile and amphibian remains (table 8). The remains attributed to mammals comprise 28 taxa among which at least 18 species have been identified. By clustering these taxa by Orders, rodents and artiodactyls are dominant; they are followed by carnivores, lagomorphs and insectivores (table 9). White-tailed deer is the most plentiful species (NISP = 325)[4]. The American beaver is second in importance. These two species contributed in a significant way to the subsistence of the Iroquoian villagers while also providing raw materials to make tools (Gates St-Pierre, Boisvert, 2015) and other derived products such as furs or skins. The other mammalian taxa identified are muskrat, leporids (including snowshoe hare), sciurids (including Eastern chipmunk and American red squirrel), black bear, raccoon, mustelid family (including American marten, Northern river otter, fisher and mink), woodchuck, mouse or vole, the genus *Canis*, American porcupine, mole family, and at the end of the list, moose.

Some birds contributed to the villagers' diet in small proportions (less than 9 % of the determined remains) (tables 3 and 8). The avian group that contributed the most to the diet is the grouse or ptarmigan group (tetraonines). The second avian group is the pigeon family (including the now extinct passenger pigeon), but in proportions corresponding to a third of the tetraonines. The anatid family, which comprises geese and ducks, yielded a few bones (half the number of columbidae). The other identified bird species are few in number: loons, passeriformes, grebes, diurnal raptors (indeterminate eagle), woodpeckers, ciconiiformes (sandpiper, plover or gull), nocturnal raptors (owl family) and the jay family.

The amphibian group yielded 5 % of the determined remains (tables 3 and 8). They belong mostly to the anura group with several bones of Eastern American toad and frogs. Without excluding them from the villagers' diet, several skeletal pieces of these amphibians were so small that it suggests an accidental presence within the assemblage (dead animals *in situ*). Two bones were identified as bullfrog. The mudpuppy, an aquatic salamander of good size, could have been captured accidentally during fishing activities.

Reptiles are poorly represented in the village's fauna with less than 1 % of all determined remains (tables 3 and 8). Testudines (turtles) have yielded the majority of bones for this group and only the common snapping turtle was identified. One small vertebra permitted the identification of a snake.

Looking for disparities between the village's households, determined taxa were distributed between the nine studied components. The data are presented in table 8 (distribution of identified taxa) and table 9 (distribution of clusters of identified taxa).

Faunal distribution inside residential structures reveals no differences among the various domestic units such as living compartments. Among the households, the six numerically dominant taxa (white-tailed deer, American beaver, cervids, muskrat, leporids and chipmunk) are present everywhere and always the most plentiful. Lagomorphs, rodents, carnivores and artiodactyls are

4. This total includes the white-tailed deer remains, as well as cervid and artiodactyl remains belonging most probably to white-tailed deer.

TAXA	LH1	LH2	LH3	LH4	LH5	LH6	NWM	DCW	SDW	TOTAL	%
AMPHIBIANS	**21**	**5**	**21**	**14**	**3**		**1**	**4**	**19**	**88**	**5.50**
Mudpuppy									1	1	
Eastern American toad		3	13	9				1	3	29	
Indeterminate frog	12		4		2			1	6	25	
Bullfrog			1					1		2	
Toad / frog	9	2	3	5	1		1	1	9	31	
REPTILES		**1**					**6**		**1**	**8**	**0.50**
Turtles											
Common snapping turtle							4			4	
Indeterminate turtle		1					2			3	
Snakes											
Indeterminate snake									1	1	
BIRDS	**25**	**2**	**9**	**2**	**1**	**3**	**24**	**19**	**54**	**139**	**8.70**
Grebe family								4		4	
Loon family			7				2			9	
Swan / goose / duck	1						1			2	
Indeterminate goose	1									1	
Indeterminate duck				1			1	2	2	6	
Mallard / black duck							1			1	
Indeterminate raptor								1		1	
Indeterminate eagle					1		1	1	1	4	
Grouse / ptarmigan	15			1		3	4	2	47	72	
Sandpiper / plover / gull							1			1	
Pigeon / dove	1	1					3		1	6	
Passenger pigeon	1	1	1				8	6	2	19	
Owl family							1			1	
Woodpecker family								3		3	
Passeriformes	6						1		1	8	
Jay family			1							1	
MAMMALS	**168**	**178**	**142**	**69**	**34**	**28**	**196**	**267**	**284**	**1366**	**85.30**
Mole family	5									5	
Rabbit / hare	8	12	2	2	1	3	12	7	22	69	
Snowshoe hare	1	1					3	2		7	
Indeterminate rodent	1	7			1	1	4	4	7	25	
Chipmunk / woodchuck / squirrel	6	13	10	4			3	14	14	64	
Eastern chipmunk	9	5	4	1	4	1	4	18	18	64	
Woodchuck	9	2			3	1	1	3	3	22	
American red squirrel			2							2	
Beaver / porcupine (big rodent)	1	1		1	1		2	3	11	20	
American beaver	34	24	33	3	7	2	29	72	54	258	
Mouse / muskrat / vole	1			2					1	4	
Mouse / vole			2					2	10	14	
Muskrat	7	3	6	7	1	1	23	27	6	81	
American porcupine						4			1	5	
Indeterminate carnivore	10	3	4		3	3	10	14	11	58	

Coyote / wolf / dog / fox			1	1						2	
Coyote / wolf / dog		3	1			1	1	2		8	
Black bear	7	1	9		1		14	6	4	42	
Raccoon	11	1	1		2	3	8	2	1	29	
Marten / fisher / mink / otter	3	1	1			1	1	4	1	12	
American marten		1	3				1	1	1	7	
Fisher	1	2								3	
Mink			1							1	
Northern river otter								4	2	6	
Indeterminate artiodactyl	4	10	4	5		2	12	5	13	55	
Caribou / deer / moose / wapiti	20	42	22	4	6	2	17	36	28	177	
White-tailed deer	30	46	35	39	4	3	51	41	76	325	
Moose			1							1	
TOTAL NISP	**214**	**186**	**172**	**85**	**38**	**31**	**227**	**290**	**358**	**1 601**	**100**

Table 8 - Distribution of identified taxa (identified to Order and lower) for amphibians, reptiles, birds and mammals among the site components (NISP by taxonomic order) (LH1 to LH6: longhouses; NWM: northwest midden; CWM: central-west midden; SWM: southwest midden) (NISP = number of identified specimens).

TAXA	LH1	LH2	LH3	LH4	LH5	LH6	NWM	DCW	SDW	TOTAL
AMPHIBIANS	**21**	**5**	**21**	**14**	**3**	**0**	**1**	**4**	**19**	**88**
Caudata									1	**1**
Anoura	21	5	21	14	3		1	4	18	**87**
REPTILES		**1**					**6**		**1**	**8**
Turtles		1					6		1	**7**
Snakes									1	**1**
BIRDS	**25**	**2**	**9**	**2**	**1**	**3**	**24**	**19**	**54**	**139**
Grebe family								4		**4**
Loon family			7				2			**9**
Anatids	2			1			3	2	2	**10**
Raptors					1		2	2	1	**6**
Tetraoninae	15			1		3	4	2	47	**72**
Ciconiiformes							1			**1**
Columbids	2	2	1				11	6	3	**25**
Woodpecker family								3		**3**
Passeriformes	6						1		1	**8**
Corvids			1							**1**
MAMMALS	**168**	**178**	**142**	**69**	**34**	**28**	**196**	**267**	**284**	**1 366**
Insectivores	5									**5**
Lagomorphes	9	13	2	2	1	3	15	9	22	**76**
Rodents	68	55	57	18	17	10	66	143	125	**559**
Carnivores	32	12	21	1	6	8	35	33	20	**168**
Artiodactyls	54	98	62	48	10	7	80	82	117	**558**
TOTAL NISP	**214**	**186**	**172**	**85**	**38**	**31**	**227**	**290**	**358**	**1 601**

Table 9 - Distribution of larger groupings of identified taxa (identified to Order and lower) for amphibians, reptiles, birds and mammals among the site components (NISP by taxonomic order) (LH1 to LH6: longhouses; NWM: northwest midden; CWM: central-west midden; SWM: southwest midden) (NISP = number of identified specimens).

found in all houses; only insectivores are found only in longhouse # 1. Regarding the dominant proportions at the Order level, it is noted that rodents are more popular in longhouse # 1, while artiodactyls are more frequent in longhouses # 2 and # 4. Rodents and artiodactyls are almost equal in longhouse # 3. Birds are sporadically distributed between longhouses. Only tetraonines and columbids, the most important numerically, are present in more than one longhouse. Amphibians, while numerically less numerous than birds, are better distributed among households than the birds. Anura (toad and frogs) were identified in almost all longhouses. The bullfrog, the biggest species of frog, was identified in longhouse # 3. As for turtles, they were found only in longhouse # 2.

The juxtaposition of taxa between households and their middens does not reveal any connections and the only plausible lines of association are supported by a very low number of remains. A simplified taxa distribution using a qualitative approach (presence / absence)[5] illustrates the relative uniformity of the distribution (table 10). Some exceptions are worth mentioning. For mammals, we can bring up three cases: canids which are absent from the three middens and appear only in longhouse # 3 (probably a dog – *Canis lupus familiaris*) and longhouse # 4 (maybe fox); the taxon *Canis spp.* is found only in longhouse # 2 (with the possibility of one wolf – *Canis lupus*) and its northwest midden, as well as in longhouse # 3 and in central-west midden[6]; and, the American porcupine identified only in longhouse # 6 and in the southwest midden. Amphibians, found almost everywhere, are in general less important in household # 2 and its southwest midden. Birds, although everywhere, are better represented in longhouse # 1 as well as in the three middens. An additional association is supplied by turtles, which are found only in longhouse # 2 and its associated northwest midden. To summarize, the whole collection seems homogeneous with slight indices linking longhouses # 1 and # 2 as well as their respective middens (southwest and northeast).

White-tailed deer and American beaver spatial distribution inside longhouses # 1 and # 2 was used as an attempt to identify activity areas in the two longhouses' interior. For the entire site, it must be said beforehand that deer yielded mostly primary butchering waste of carcasses (lower parts of legs and cranial elements) while the beaver is represented by all parts of the skeleton (St-Germain, Courtemanche, 2015). Within longhouse # 1, 30 identified deer skeletal specimens and 34 beaver specimens were distributed over the entire surface, although they are mostly encountered within the central alley, near features (hearths and pits), or inside pits such as pit #25 located at the house center near the northern wall. The spatial distribution of deer and beaver remains within longhouse # 2 is similar to the one observed in longhouse # 1. The 46 white-tailed deer skeletal remains are distributed mostly along the central alley in the periphery of the hearths and pits. Two clusters of deer bones are noted: the first near hearth # 41 at the southern end of the house and the second within pit # 17 at the center of the house. The 24 American beaver bones and teeth remains are scattered along the central alley near hearths and pits, except for some specimens located south of hearth # 19 near the southern wall of the house (below a sleeping platform?). In the two longhouses, the axial skeleton (cranium and spine) as well as beaver front and hind legs are found around each hearth. Thus, in longhouse # 1, the three individual animals identified are located near three distinct hearths and each family would have butchered its own beaver.

5. For table 10, the ducks, the columbidae (including passenger pigeon), and the leporids (including American hare) are aggregated.
6. One *Canis spp.* canine found in longhouse # 6 may represent a dog.

TAXA	LH1	SWM	LH2	NWM	LH3	LH4
AMPHIBIANS						
Mudpuppy		X				
Eastern American toad		X	X		X	X
Indeterminate frog	X	X			X	
Bullfrog					X	
Toad / frog	X	X	X	X	X	X
REPTILES						
Common snapping turtle				X		
Indeterminate turtle			X	X		
Indeterminate snake		X				
BIRDS						
Grebe family						
Loon family				X	X	
Swan / goose / duck	X			X		
Indeterminate goose	X					
Indeterminate duck		X		X		X
Indeterminate raptor						
Indeterminate eagle		X		X		
Grouse / ptarmigan	X	X		X		X
Sandpiper / plover / gull				X		
Pigeon / dove ; passenger pigeon	X	X	X	X	X	
Owl family				X		
Woodpecker family						
Passeriformes	X	X		X		
Jay family					X	
MAMMALS						
Mole family	X					
Leporids and snowshoe hare	X	X	X	X	X	X
Indeterminate rodent	X	X	X	X		
Chipmunk / woodchuck / squirrel	X	X	X	X	X	X
Eastern chipmunk	X	X	X	X	X	X
Woodchuck	X	X	X	X		
American red squirrel					X	
Beaver / porcupine (big rodent)	X	X	X	X		X
American beaver	X	X	X	X	X	X
Mouse / muskrat / vole	X	X				X
Mouse / vole		X			X	
Muskrat	X	X	X	X	X	X

American porcupine		X				
Indeterminate carnivore	X	X	X	X	X	
Coyote / wolf / dog / fox					X	X
Coyote / wolf / dog			X	X	X	
Black bear	X	X	X	X	X	
Raccoon	X	X	X	X	X	
Marten / fisher / mink / otter	X	X	X	X	X	
American marten		X	X	X	X	
Fisher	X		X			
Mink					X	
Northern river otter		X				
Indeterminate artiodactyl	X	X	X	X	X	X
Caribou / deer / moose / wapiti	X	X	X	X	X	X
White-tailed deer	X	X	X	X	X	X
Moose					X	

Table 10 - Comparison of identified taxa (identified to Order and lower) for amphibians, reptiles, birds and mammals from longhouses LH1 and LH2 and their middens (SWM: southwest midden and NWM: northwest midden), and from longhouses LH3 and LH4.

3 - Final remarks

From the identified species of vertebrates inventoried at the Mailhot-Curran site, a relative spatial uniformity is perceivable. This observed homogeneity among all of the components does not allow for the definition of distinct clusters which makes it impossible at this stage to recognize any particularities for the six longhouses based on bone remains found inside them. Similarly, the association between longhouses # 1 and # 2 and their respective middens (southwest for longhouse # 1 and northwest midden for longhouse # 2) is conceivable, but remains tenuous.

The animals significantly exploited by the inhabitants were not concentrated in specific sectors but dispersed throughout the village space. The spatial distribution of the two mammalian key species, white-tailed deer and American beaver, does not show any clustering related to their use within longhouses # 1 and # 2. The slight discrepancies observed are from a few taxa such as the salmon and turtles.

Therefore, an even distribution of all of the products of fishing and hunting emerges based on skeletal remains among members of each household. The idea of a communal sharing of animal resources is in harmony with the current understanding of Iroquoian communities characterised by an egalitarian social fabric and strong social cohesion (Chapdelaine 2015d: 405-406). The inhabitants of Mailhot-Curran were part of this socio-economic organisational model.

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