CHAPTER 6
Seasonality

The characterization of the Namu economy and the explanation of its transitions over time depend in part on the inferred scheduling of economic activity and the potential for changes in the seasonal duration of site occupation. The faunal data can indicate at least a minimal seasonal range of economic activity. The available evidence includes: 1) seasonally limited species of fish and bird; 2) seasonally specific neonatal harbour seal elements; and 3) seasonal growth increments in shell (Stevenson 1977). The relative abundance of seasonally available species also provides some indication of variation in the intensity of economic activity.

SPECIES AVAILABILITY

The study of the salmon age profile (Chapter 5) provided a very precise late September/early October date for the minimum season of site occupation. This inference is based on the conclusion that the majority of recovered salmon were either young chum *(O. keta)* or coho *(O. kisutch)*, and the further assumption that the recovered remains are representative of the fish that were caught in the site vicinity. A possible variation in the timing of salmon fishing is indicated by the slight increase in the percentages of two- and four-year-old fish in the Period 5 assemblage (Tab. 17), which probably represent a greater proportion of pink and older chum in the salmon assemblage. These fish spawn during the early part of the late summer/early fall salmon fishery, and their greater abundance could indicate a slightly earlier arrival at the site (mid-to-late September), possibly to increase access to salmon at a time of declining stocks.

The utilization of seasonally restricted salmon runs defines seasonality much more precisely than is normally possible. Migratory bird species often are used as seasonal indicators despite the fact that most species are available over a broad time span. Almost all of the identified birds from Namu are either available year-round or are species that "winter" on the coast and migrate to the interior in the summer. For many species, a winter presence can range from September to March (see McAllister 1980:169). Therefore it is more accurate to speak of summer absence than winter presence. Only the shearwater *(Puffinus sp.)*, which is represented by a single element, is present in summer only, but because it can be present in late spring its isolated occurrence cannot be taken as an indication of summer occupation.

Very little seasonal information is provided by the Namu bird specimens. The large number of birds in Period 3 could be taken as an indication of more intensive winter occupation, but the temporal trends for winter birds generally correspond to the trends for species such as the common murre *(Uria aalge)*, which are available year-round. The Period 3 abundance of bird remains is probably a function of intra-site deposition patterns (see Chapter 3).

Herring *(Clupea harengus pallasi)* remains probably indicate fishing at the time of spawning in late winter or early spring (Hart 1973:97). Cod are also said to provide an indication of spring or summer occupation because they move into deep water in autumn and return to shallow water in spring (Hart 1973:223). The abundance of cod in certain periods could be taken as an indication of more intense fishing

in spring or summer, but there is no other evidence of significant variation in the scale of seasonal occupation. Fluctuations in the abundance of cod are difficult to interpret.

The least ambiguous of the seasonal evidence indicates consistent autumn (coho and/or chum salmon) and spring (herring) fishing. It is reasonable to infer continuous winter occupation on this basis since there are few reasons for catching and preserving winter salmon supplies at one location, moving to another site for a brief winter stay, only to return to the original site in early spring for the herring season. The lack of pink salmon and older chum salmon, and the lack of summer-specific species among the recovered fauna suggests that the site was probably unoccupied for most of the summer. The age determination of harbour seal provides further evidence that the site was temporarily abandoned in summer.

Neonatal or juvenile specimens, which might provide a very specific indication of seasonal occupation, are generally rare in the Namu assemblage. Apart from a few remains of dog *(Canis familiaris)*, only harbour seal were identified as neonatal specimens. Harbour seal pups are generally born between mid-May and mid-June; the peak of the pupping season is in early June (Banfield 1974:370). A neonatal harbour seal specimen obtained in mid-June was available in the Simon Fraser University comparative zooarchaeology collection. Size and morphological correspondence between this specimen and many of the recovered seal bones indicated that a relatively large number of neonatal specimens were present in the Namu assemblage. Table 18 lists the frequency of neonatal elements; these represent every major occupation period between 7000 and 2000 cal. B.P., and they are included within the very oldest fauna-bearing deposits.

The Namu seal-pup bones exhibit minimal size and morphological variation, which indicates that all were either neonatal or very near neonatal in age. One archaeological specimen that is somewhat smaller than the comparative specimen may have been foetal. Another inferred neonatal specimen is slightly larger than the comparative specimen, but given the rapid growth of seal pups and the duration of the pupping season, it is likely that it was killed at about the same time of year. The seal-pup remains probably all derive from a very narrow seasonal time frame around the mid-June peak in the pupping season. The presence of adult or near-adult specimens in the rest of the Namu harbour seal assemblage, and the absence of any specimens of

Table 18. Neonatal Harbour Seal (Phoca vitulina) Elements by Temporal Period.

	Period			
Element	**2**	**3**	**4**	**5**
Vertebral arch	5	28	-	1
Vertebra centra	4	14	2	-
Innominate	-	2	1	-
Sternum	-	1	-	-
Femur	5	1	3	-
Tibia	-	-	1	-
Calcaneous	-	-	1	-
Metapodials	-	2	-	-
Humerus	1	1	2	-
Radius	-	-	1	-
Total	**15**	**49**	**11**	**1**

intermediate age, is a good indication that the site was probably not occupied for the period immediately following the pupping season. There is no explanation involving seasonal seal migration or Native hunting patterns that can otherwise account for the absence of intermediate-age harbour seal.

The Namu faunal collection also does not contain any specimens of foetal or neonatal deer, which would indicate summer occupation. The interpretation of this and the harbour seal remains as an indication of summer absence implies the consistent maintenance of a very precise seasonal schedule of economic activity, which dates to at least 7000 years ago. The regular pattern of summer absence could be explained by the exploitation of seasonally abundant resources at another locality. Contemporary ethnographic accounts indicate that the first of the major sockeye runs at Rivers Inlet in July is a major attraction for Native groups on the Central Coast. Every year in early July, contemporary Kwakiutl villages are partially abandoned as families travel to Rivers Inlet to mark the beginning of the salmon-fishing season (Rohner 1967:24). Rivers and Smith Inlets presently account for 16% of the total British Columbia and Washington State sockeye salmon fishery (Aro and Shepard 1967:239), and this is the only major sockeye spawning area on the Central Coast. Sockeye salmon become available when winter salmon supplies would have been exhausted and the spring harvest of herring was long past. Therefore, the attraction of the sockeye salmon run in the past probably would have been even greater than it is today.

If Namu was consistently abandoned near the end of the late spring seal pupping season, then it was likely in order to take advantage of the sockeye salmon fishing season at Rivers Inlet. Summer movement to take advantage of seasonally abundant resources was a well-established ethnographic pattern on the Northwest Coast. The seasonal interpretation of the Namu fauna suggests that this pattern was established by 7000 cal. B.P. Once the salmon runs were established following deglaciation, it is likely that Native fishing would assume a pattern that would take maximum advantage of the timing of specific spawning runs.

SHELLFISH GROWTH INCREMENTS

Stevenson (1977) conducted a limited study of seasonal growth increments on shell samples taken from the 1977 excavations. As with other seasonal indicators, the results of the shellfish study are ambiguous in establishing the presence or absence of seasonal occupation, but the results do provide an interesting indication of the seasonal pattern of gathering butter clams *(Saxidomus giganteus)*, the one species examined in Stevenson's study. Based on growth increments, four seasons were defined, including: 1) early spring, 2) late spring/summer, 3) late summer/fall, and 4) winter. The majority (73-92%) of shells in samples taken from strata deposited in Periods 3, 4, 5, and 6 were gathered in late spring/summer. The only significant departure from this pattern were shells from Period 5 strata. A larger percentage of Period 5 clams (20% as compared to 10% for Periods 3 and 4) were gathered in late summer/fall, though the majority were still gathered in late spring/summer. As Stevenson (1977:10) notes, this spring/summer, summer/fall utilization is in keeping with ethnographic information regarding the seasonality of shellfish gathering (see Ham 1976:74). If shellfish supplemented winter supplies of dried salmon, then the greatest demand would be in late spring when salmon stores were likely to be exhausted. The Period 5 increase in clams gathered in late summer/autumn might indicate greater need for winter supplies of preserved shellfish at a time when the local salmon fishery was in decline. However, the late summer/early autumn pattern of shellfish collection is not sustained in the one sample of 15 shells from a Period 6 deposit.

The inability to distinguish summer growth from late spring or autumn growth made it impossible to use the shellfish study results to resolve the question of whether the site was occupied during the summer. The possibility of late spring (i.e. May and June) and autumn (i.e. September and October) utilization of shellfish (Ham 1976:74) is not inconsistent with a pattern of summer abandonment.

SUMMARY

Despite the serious limitations of seasonality data, they demonstrate with certainty: 1) an early autumn presence, based on the presence of coho and/or chum salmon, 2) an early spring presence, based on the presence of herring, and 3) a late spring presence, based on the presence of neonatal harbour seal. Working from this information, it is possible to infer that Namu was a winter village site, which was probably unoccupied July through September. Winter occupation is assumed on the basis of a fall and early spring presence, and the lack of any economic reason to leave the site between the times of the last salmon runs in October and November and the herring spawning in February or March. Summer absence is inferred from: 1) the lack of harbour seal older than neonatal and younger than young adult, 2) the absence of summer-spawning salmon species such as chinook and sockeye, and 3) the relative absence of pink salmon and four-year-old chum salmon, which would run in early September.

The ethnographic Northwest Coast settlement pattern was based on major winter villages and smaller summer campsites established to take advantage of seasonally-available resources. If Namu was a major winter village during the last 7000 years of its occupation, then a series of corresponding summer activity sites should be located nearby. A resource based survey of the Central Coast region, along the lines suggested by Pomeroy (1980), might yield evidence of summer activity sites fitting within the time frame of the present study. A search for evidence of prehistoric sockeye fishing at Rivers Inlet is one of several lines of further investigation. Other summer resource extraction sites might be based on berries, trout, or pink salmon.

The faunal data indicate long-term consistency in seasonal activities. From the time of the earliest fauna-bearing levels, there is evidence of herring, neonatal seal, and a predominance of coho and/or three-year-old chum among the recovered salmon remains. The seasonal pattern extends at least 7000 years into the past and was maintained throughout later occupations. The available evidence also indicates long-term consistency in the seasonal pattern of shellfish collection. Only the Period 5 assemblage exhibits any slight deviation from the general pattern of seasonal resource utilization. In Period 5 there is a slight increase in two and four-year-old salmon, and a possible increase in shellfish collection in the fall. Each of these minor variations could be explained as a response to the decline of the Namu salmon fishery, but they do not indicate a significant change from earlier seasonal patterns.

The salmon fishery and timing of salmon runs were probably the major determinants of the Namu seasonal round. Spawning runs of sockeye salmon provided incentive to leave Namu in summer, while chum and coho salmon runs provided incentive for return in early autumn. Other resources that became available between these times were exploited as need required and opportunity allowed, but the subsistence economy represented a primary adaptation to the availability of salmon.

Beyond the evidence of long-term consistency in seasonal economic activity, the faunal data indicate that Namu was a winter village site for at least the last 7000 years. From the earliest date for which faunal evidence is available, seasonally abundant resources sustained a continuous resident population for nine months of the year. The ethnographic pattern of permanent winter settlement is therefore evident at Namu from at least 7000 cal. B.P. This essentially sedentary pattern of settlement was established prior to the peak in salmon productivity, and was sustained for 1000 years before the intensive exploitation of shellfish began.

Given the intensive use of salmon and the sustained winter occupation of the site, it is reasonable to infer that salmon were preserved and stored for winter use, though there is no definitive evidence of storage at the site. If the early Namu settlement was a permanent winter village sustained on the basis of stored salmon, then it is necessary to re-evaluate many of the proposals that have been made regarding the causes of economic transitions on the Northwest Coast. The Namu winter village settlement did not depend on peak salmon productivity, and it was not initially sustained through intensive exploitation of shellfish. Larger aggregates,

which may have followed the peak in salmon productivity, are associated with the increased use of shellfish, but these developments were neither necessary for, nor the outcome of semi-sedentary settlement. The implication is that semi-sedentary settlement was not a sufficient basis for sustained population growth. If population growth was a later development associated with greater salmon productivity and the increased use of shellfish, then it must have been due to more than the establishment of semi-sedentary village settlement.

The results of the seasonality studies indicate long-term use of seasonally-abundant resources. The establishment of this pattern from the time of the earliest shell deposition and bone preservation suggests that it likely extends still further back in time. The only subsequent change in economic activity is the intensification of seasonal resource use, which begins with greater exploitation of salmon in Period 3 and culminates in the peak exploitation of salmon, herring, and harbour seal in Period 4. The seasonal pattern of economic activity also continues through the inferred decline in site occupation in Periods 5 and 6. The scale of the occupation may have been reduced, but the pattern of site settlement remained essentially unchanged. When combined with evidence of temporal change in vertebrate fauna abundance, the seasonality evidence allows for a remarkably complete reconstruction of Namu's economic prehistory.