

A “Cold Case” Archaeofauna from Torqua Cave (CA-SCAI-32), Santa Catalina Island

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Abstract

A sizeable collection of faunal remains extracted decades ago from a 200-cm-deep midden at Torqua Cave (CA-SCAI-32) had never been studied to assess the subsistence customs of the occupants of the site. The present analysis reveals that although the cave is located about 3 km inland from the island’s present coast, substantial quantities of marine mammals, especially small cetaceans (i.e., dolphins and/or porpoises), were used at the cave. The animals were probably butchered at the shoreline, and the preferred fleshiest portions were transported up the western foothills. A direct link to the Little Harbor site (CA-SCAI-17) is suggested.

Introduction

Torqua Cave (CA-SCAI-32) (Figure 1) was first reported by a California yachtsman as he toured the island, informally recording evidence of prehistoric occupations and artifacts (Holder 1910:28). The cave was described as a rock-shelter large enough to house a small family. Clement Meighan reported it in 1973, and in that same year SCAI-32 was excavated by a UCLA team under the direction of Nelson Leonard III (Figure 2). Artifacts, burials, and faunal remains were collected from a midden extending to a depth of 200 cm, but little was reported from this project other than red Chumash-like paintings on the walls (Meighan 2000). Although Torqua Cave is recognized as one of the few rock art sites in the southern archipelago, the residential lifeways of this interior island rock-shelter had not been explored.

Years after the excavation, Quist (1978) provided a few additional details on the cave. Quoting Holder (1910:40), he mentioned that there was a smaller cave near SCAI-32 that might have served as a kitchen and that the caves were only a few hundred feet from fresh water. Large deposits of abalone (*Haliotis* spp.) shell were noted. Quist located the site at an approximate elevation of 183 m asl, just below the crest of a ridge approximately 2 km from the coastline. He estimated the midden to be about 10.7 to 12.2 m (35 to 40 ft) in diameter and approximately .9 m thick. While the accuracy of the cave location was debated (Meighan 2000:18), Van Tilberg (2000:25) confirmed its location. However, the site is now more accurately located at about 1.6 km from the beach (Wendy Teeter, personal communication 2012). In addition, a large habitation site has recently been located on the ridgeline above the cave (Wendy Teeter, personal communication 2012).

The Excavation

The 1973 excavation involved four 1 m-x-2 m pits in the midden area and extending downslope from the cave. The pits were excavated in 10 cm levels, and materials were screened through 1/4-in mesh (some possibly through 1/8-in mesh) (Wendy Teeter, personal communication 2012). Total excavated volume was 11 m³. Pit 1 produced sparse cultural material and was discontinued at 20 cm. Pit 2 produced

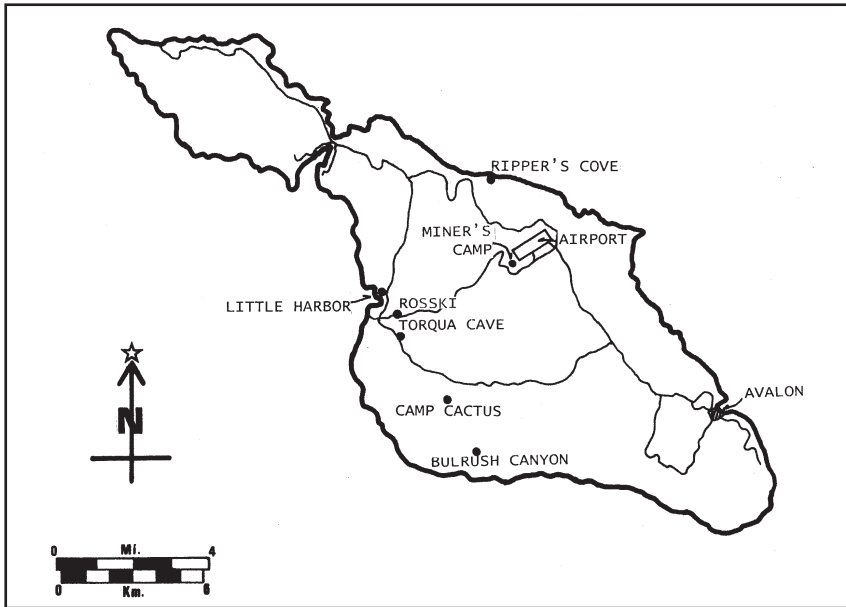


Figure 1. Map showing location of Torqua Cave on Catalina Island. Adapted from Rosen (1980).



Figure 2. UCLA team members excavating at the mouth of Torqua Cave, February 1973. (Photo courtesy of Wendy Teeter.)

cultural materials to 160 cm; Pit 3 produced cultural materials to 200 cm, and Pit 4 produced cultural materials to 170 cm. Several human burials as well as scattered human remains were recovered. The present report is based on the vertebrate faunal remains collected during the 1973 project. There are no shellfish data.

The Torqua Cave Archaeofauna

This archaeofaunal collection consists of 1,967 non-piscine vertebrate specimens weighing 1,645.83 g, along with an additional 436.68 g of fishbone (not quantified by fragment count). The total weight of the collection is 2,082.51 g. A few specimens were

burned (n=167); most of these were recovered from what was termed an "ash pit." This might have been the "kitchen" cave mentioned by Quist (1978:40). Two specimens were cut, and two have signs of gnawing by rodents. Several specimens appear to have been worked and are discussed in a later section.

Unfortunately, analysis of this archaeofauna is confounded by several conditions. First, field notes are not available, resulting in incomplete provenience information and a lack of details about the excavation techniques. Stratigraphic levels are recorded for only part of the collection, and much of the collection and many of the specimens are coded with a combination of painted colored stripes and dots. It appears that Pit 2 specimens have red stripes, Pit 3 specimens have yellow stripes, and Pit 4 specimens have green stripes, although there are also a few specimens with yellow stripes from this pit. The dots may or may not indicate levels. Some specimens have neither stratigraphic context nor color coding. Finally, severe bioturbation is indicated by a large quantity of California ground squirrel (*Otospermophilus beecheyi*) remains.

Results

The Torqua Cave fauna are grouped into six general resource categories typically found on the Channel Islands: birds; fish; pinnipeds; cetaceans; otters; and terrestrial mammals (typically artiodactyla and canids, including fox). Rodents, herpetofauna, and unidentified specimens are not included as dietary constituents since these small animals would have contributed little to the subsistence fare relative to the availability and abundance of larger species. Specimens were identified by direct comparison with curated comparative specimens at the Zooarchaeology Laboratory of the Cotsen Institute of Archaeology at UCLA. Table 1 presents number of identified specimens (NISP) and proportions of general classifications of animals in the Torqua Cave archaeofauna. In terms of the six general categories, birds provided 9.46 percent of the NISP

and 4.22 percent of bone weight. Cetaceans provided 8.9 percent of the NISP and 22.6 percent of bone weight. Pinnipeds provided 5.34 percent of the NISP and 16.1 percent of bone weight. Otters provided 1.1 percent of the NISP and 2.49 percent of bone weight. The terrestrial mammals (artiodactyla and canids) combined provided 4.63 percent of the NISP and 11.97 percent of bone weight. Table 2 presents a more detailed listing of identified specimens.

Table 3 and Figure 3 display the resources in terms of depositional level; keep in mind that much of the collection is not represented since stratigraphic levels were not specified. Nevertheless, some patterning of faunal use is revealed. First, the faunal remains appear in a series of punctuated deposits. Relatively dense deposits are separated by less dense deposits. This could reflect seasonal or occasional visits to the cave, the lack of stratigraphic information for the entire collection, or even erratic excavation techniques. Secondly, the historic component (goat remains) is concentrated in a single level (60–70 cm), suggesting a unique occupational event. The use of pinnipeds is rather evenly spread throughout the levels but in a punctuated pattern that may or may not reflect the above caveat regarding the lack of stratigraphic data for many specimens. Most fish and pinniped bone is found in the upper levels, above the notable deposit of small cetacean remains. The small cetacean bone could be dolphin and/or porpoise (superfamily Delphinoidea). The use of small cetaceans appears to have tapered off, replaced primarily by fish. Again, this patterning must be considered in light of the caveats noted above, but the fact that such patterning is apparent suggests that bioturbation by the ground squirrels had not been severe.

The Delphinoidea bone reveals a detail of use of small cetaceans at the cave. Of 175 specimens, 164 (93.7 percent) were vertebral fragments. The other 11 specimens were cranial fragments and a single rib fragment. There are no Delphinoidea forelimb bones in the Torqua Cave collection even though these

Table 1. Quantities and Proportions of Faunal Resources at Torqua Cave.

Faunal Resource	NISP	Weight (g)	% of NISP	% of Wt.
Bird	186	87.91	9.46	4.22
Delphinoidea/Cetacea	175	470.93	8.9	22.6
Pinniped	105	334.44	5.34	16.1
Otter	21	51.8	1.1	2.49
Goat/artiodactyla	36	214.81	1.83	10.3
Pig	1	0.18	0.05	0.008
Mammal, unident.	539	208.44	27.4	10
Mammal, large	36	45.33	1.83	2.18
Mammal, marine	12	18.45	0.6	0.89
Mammal, small	7	1.07	0.36	0.05
Mammal, medium	1	0.74	0.05	0.036
Dog	4	9.45	0.2	0.45
Island fox	51	25.40	2.6	1.22
Fish	–	436.68	–	21
Ground squirrel	447	137.40	22.7	6.6
Other rodent	159	19.38	8.1	0.93
Snakes/lizard	19	1.13	0.97	0.05
Vertebrata	168	18.97	8.5	0.94
Totals	1,967	2,082.51	100	100

animals have forelimbs made up of scapulae, humeri, radii, ulnae, and multiple metacarpals and phalanges. The animals were presumably butchered at a coast-line capture site, and the limbs were left behind while the fleshier abdominal portion surrounding the spinal column was transported uphill to the cave. This differs from the Delphinoidea bone recovered at Little Harbor (CA-SCAI-17) (directly on the coast about 1.6 km to the west) where numerous forelimb elements were identified (Porcasi and Fujita 2000). It is possible that the Torqua Cave cetaceans were captured and butchered at Little Harbor before being taken to the cave, suggesting a direct link between the Little Harbor and Torqua Cave sites.

The SCAI-32 faunal collection includes 136 *Microtus californicus* (California vole) specimens. This rodent

had not previously been identified on Catalina. It was accidentally introduced to nearby San Clemente Island along with the tiny western harvest mouse (*Reithrodontomys megalotis*) in pre-1939 shipments of hay from the mainland (von Bloeker 1967). It is likely that the vole was introduced to Catalina at about the same time and in a similar manner. At the time of Bloeker's report, the vole had not been found on any other island in the southern archipelago. Current publications of the Catalina Island Conservancy do not identify the California vole on the island, although the western harvest mouse is known there along with large populations of *Peromyscus maniculatus* (deer mouse) and *Otospermophilus beecheyi* (California ground squirrel).

Like other Catalina Island sites, the only deer bone recovered from Torqua Cave is either a worked tool or

Table 2. Non-Piscine Taxa Identified at Torqua Cave.

Species List	Common Name	NISP
Accipitridae	hawk	1
Alcidae	auks, etc.	2
<i>Alectoris chukar</i>	chukar	1
Arctocephalinae	fur seal	2
<i>Arctocephalus townsendi</i>	southern/Guadalupe fur seal	1
Artiodactyla	deer/sheep/goat	2
Aves	unidentified bird	76
Aves, large	unidentified large bird	1
Aves, small	unidentified small bird	1
<i>Aythya</i> spp.	bay duck	1
<i>Buteo jamaicensis</i>	red-tailed hawk	1
Canis spp.	dog/coyote/fox	4
<i>Capra hircus</i>	goat	34
<i>Catharus ustulatus</i>	Swainson’s thrush	2
Cetacea	cetacean	1
Colubridae	colubrid snake	3
<i>Corvus brachyrhynchos</i>	crow	1
<i>Crotalus viridis</i>	western rattlesnake	9
Delphinoidea	dolphin/porpoise	174
<i>Diomedea</i> spp.	Albatross	16
<i>Elgaria (Gerrhonotus) Multicarinatus</i>	southern alligator lizard	3
<i>Enhydra lutris</i>	sea otter	21
<i>Fratercula Cirrhata</i>	tufted puffin	1
<i>Fulica Americana</i>	American coot	1
<i>Fulmarus glacialis</i>	northern fulmar	9
<i>Gavia</i> spp.	Loon	1
<i>Larus</i> spp.	Gull	19
Mammal	mammal	539
Mammal, large	mammal, large	36
Mammal, marine	marine mammal	12
Mammal, small	mammal, small	7
Mammal, medium	mammal, medium	1
<i>Microtus Californicus</i>	California vole	136
Otariidae	eared seal	31
<i>Otus Kennicotti</i>	western screech-owl	1

Table 2. Continued.

Species List	Common Name	NISP
<i>Peromyscus maniculatus</i>	deer mouse	11
<i>Phalacrocorax</i> spp.	Cormorant	12
<i>Phoca vitulina</i>	harbor seal	18
Pinniped	pinniped	26
<i>Pituophis melanoleucus</i>	gopher snake	1
<i>Ptychoramphus aleuticus</i>	Cassin’s auklet	35
Rodentia	mouse/rat	12
Salientia	frog/toad	1
Serpentes	snake	2
<i>Otospermophilus beecheyi</i>	California ground squirrel	447
<i>Sus scrofa</i>	pig	1
<i>Urocyon littoralis Catalinae</i>	island fox	51
<i>Zalophus californianus</i>	California sea lion	27
<i>Zenaidra macroura</i>	mourning dove	4
Vertebrata	unidentified vertebrate	168
Total		1,967

tool-making material such as antler or proximal metapodial (sometimes with associated “riders” as defined by Binford [1984]) (Porcasi 2010; Rosenthal 1988:67, 86). Metapodials produce little flesh, but proximal metapodials are prime material for awls and other tools requiring straight shafts and dense cortex. This suggests that deer bone was imported to the island for tool-making or arrived as finished tools and that it was probably a relatively rare, highly valued import from the mainland. Overall, deer played a very small role (if any) in the diet.

The original excavators assigned artifact catalog numbers to 28 bone specimens on the basis of apparent purposeful modification. Some of these are shown in Figures 4 and 5. However, further analysis revealed that several of these are natural (i.e., unworked) bones. Four additional worked bone fragments were found during the faunal analysis (Table 4). The entire Torqua

Table 3. Stratigraphic Deposition of Faunal Remains.

Level (cm)	NISP	Weight (g)
0–10	8	2.99
10–20	13	7.86
20–30	31	35.88
30–40	151	135.69
40–50	52	25.98
40–50 ^a	55	22.14
50–60	28	15.34
60–70	96	129.29
70–80 ^b	?	?
80–90	75	71.09
90–100	53	38.9
100–110	40	64.25
110–120	83	34.66
120–130	12	6.43
130–140	49	53.67
140–150	60	39.98
150–160	38	12
160–170	73	58.24
170–180	85	82.59
180–190	137	111.21
190–200	58	31.1

^aProblematic level designation. Probably Unit 3, 50–60 cm.

^bNo remains recorded at this level.

Cave artifact collection is yet to be studied, but the worked bone specimens reported here reflect a focus on fishing.

The historic component of Torqua Cave is evidenced by a small quantity of goat, pig, and chukar bones and historic artifacts such as a carved bone button, but most of the faunal collection is clearly dietary residue of prehistoric islanders. The goat, pig, and chukar were introduced (along with other large mammals such as deer and cattle) for both grazing and hunting purposes.

The dietary remains and human burials at Torqua Cave suggest that this was a residential setting to which marine foods were transported from shoreline sites. The rock art suggests there may have been a ritual context as well. The occupants of Torqua Cave might actually have been shoreline dwellers (possibly from Little Harbor) who used the cave periodically at specific seasons or for limited purposes.

Discussion

The prehistoric occupants of Torqua Cave subsisted on a marine-focused diet collected at shoreline sites such as nearby Little Harbor. Historic use of the cave is evidenced by introduced terrestrial taxa (goat, pig, and chukar) in upper levels. Overall, the cave archaeofauna differed little from diets found at sites located immediately at the shoreline. That being said, not many Catalina Island archaeofaunas have been described in detail. With the addition of the Torqua Cave data, however, it is possible to begin construction of a generalized pattern of faunal exploitation by Catalina islanders.

Table 5 and Figure 6 present a comparison of the Torqua Cave faunal collection with archaeofaunas reported from other well-known Catalina Island sites. Of these, Ripper's Cove (CA-SCAI-26) and Little Harbor (SCAI-17) data are most detailed. Ripper's Cove produced 7,010 non-piscine specimens with a weight 5,386.77 g along with an additional 4,160.92 g of fishbone for a total weight of 9,547.69 g (Porcasi 2010). In combined 1973 and 1991 projects Little Harbor produced 21,227 non-piscine specimens weighing 27,863 g (Porcasi 1999). There are no fishbone data from Little Harbor.

At Rosski (CA-SCAI-45) Rosen (1980:39) reported 372.96 g of bone consisting of 193.91 g of fish, 11.82 g of bird, and 167.23 g of mammal. Of the mammal, 136.35 g, or 82 percent, was unidentified. Of the

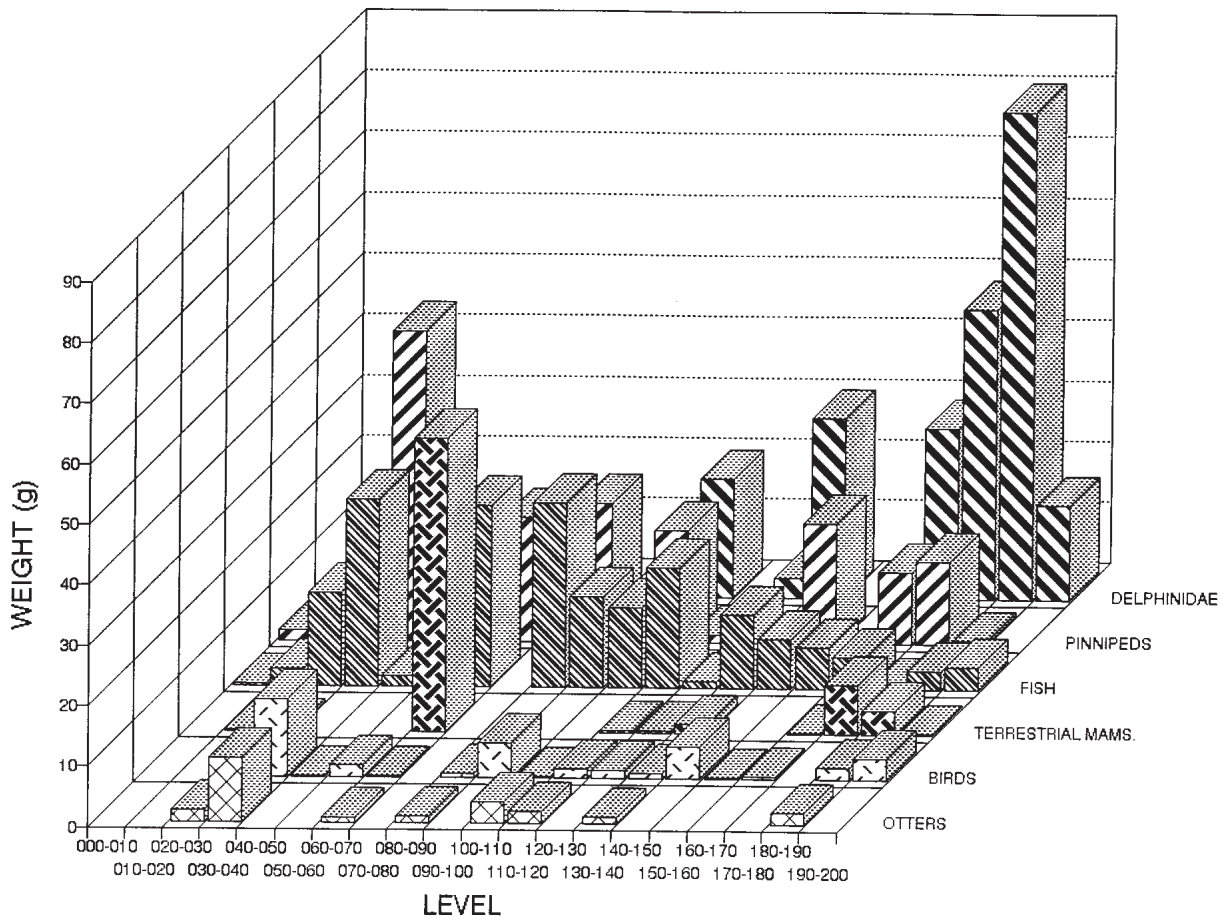


Figure 3. Torqua Cave faunal resources by stratigraphic level.



Figure 4. Worked bone specimens (left to right): Cat # 5, mammal limb shaft burned, polished, with etched decorative diamond shapes; no catalog number, mammal fragment with series of perforations



Figure 5. Worked bone specimens (left to right): Cat. # 81, bird ulna perforated (possible whistle); Cat # 233, bone button (historic); Cat # 239, bird limb shaft possibly scored to make beads; Cat # 206, mammal composite fishhook barb; Cat # 234, bird limb shaft pin (?); Cat # 15, large bird limb shaft with beveled tip.

Table 4. Worked Bone Specimens from Torqua Cave.

Catalog No.	Taxon	Element	Weight (g)	Modification	Pit	Level (cm)/color coding
5	Mammal	Limb	2.16	Scored with decorative pattern; conjoins No. 264	?	?
15	Bird	Limb	1.92	Pointed tip	?	?
27	Mammal	Indet	.83	Pointed tip	?	?
38	Bird	Limb	.08	Tubular bead	?	?
81	Bird	Ulna	.56	Perforated, whistle (?)	?	?
108	Bird	Limb	.69	Pointed tip	?	?
140	Bird	Limb	.12	Poss. bead blank	?	?
143	Bird	Limb	.94	Pointed tip (3 pieces)	?	?
195	Mammal	Indet	.72	Pointed tip	?	?
206	Mammal	Indet	1.28	Composite fishhook barb	?	?
209	Bird	Limb	.26	Pointed tip (3 pieces)	?	?
227	Bird	Indet	.16	Pointed tip	?	?
233	Mammal	Indet	.83	Button (historic)	2	50-60
234	Bird	Limb	.96	Pointed pin (?)	?	?
239	Bird	Limb	.26	Scored to cut beads	?	?
252	Bird	Limb	1.92	Beveled edges	?	?

Table 4. Continued.

Catalog No.	Taxon	Element	Weight (g)	Modification	Pit	Level (cm)/color coding
253	Mammal	Limb	.64	Worked tip (2 pieces)	?	?
254	Mammal	Rib	2.44	Striated	?	?
262	Bird	Limb	1.11	Pointed tip (3 pieces)	?	Yellow stripe
264	Mammal	Limb	.45	Scored; conjoins No. 5	?	?
269	Mammal	Indet	.59	Scored	?	?
None	Bird	Limb	.29	Pointed tip	4	50–60
None	Cetacean	Indet	13.86	Worked	3	Yellow stripe
None	Mammal	Indet	.32	Beveled edge	3	120–130
None	Mammal	Indet	.32	Rows of punctures	2	20–30

Table 5. Comparison of Torqua Cave and Other Catalina Island Archaeofaunas in Terms of Proportion (Percent) of Bone Weight.

Resource	Torqua Cave	Ripper's Cove	Little Harbor ^a	Roski	Miner's Camp
Fish	21	43.6	–	52	37
Bird	4.22	2.99	.63	3.2	2.1
Pinniped	16.1	8.9	12.7	4.6	3.6
Cetacean	22.6	19.76	48.3	0	0
Fox	1.22	.17	.14	2.0	0
Squirrel	6.6	1.35	.03	1.6	4.2
Other Rodent	.93	0	.004	.056	0
Otter	2.49	1.85	.75	0	0
Unident. Mammal ^b	13.16	16.10	36	36.6 ^d	53 ^d
Artiodactyla ^c	10.3	4.74	.19	0	0
Canid	.45	0	.14	0	0
Snake/lizard	.05	0	0	0	0
Unident. Vertebrata	.94	.54	.13	0	0
Totals	100	100	100	100	100

^a Non-piscine specimens only.

^b All sizes, terrestrial and marine.

^c Includes suidae.

^d Majority identified as terrestrial mammal.

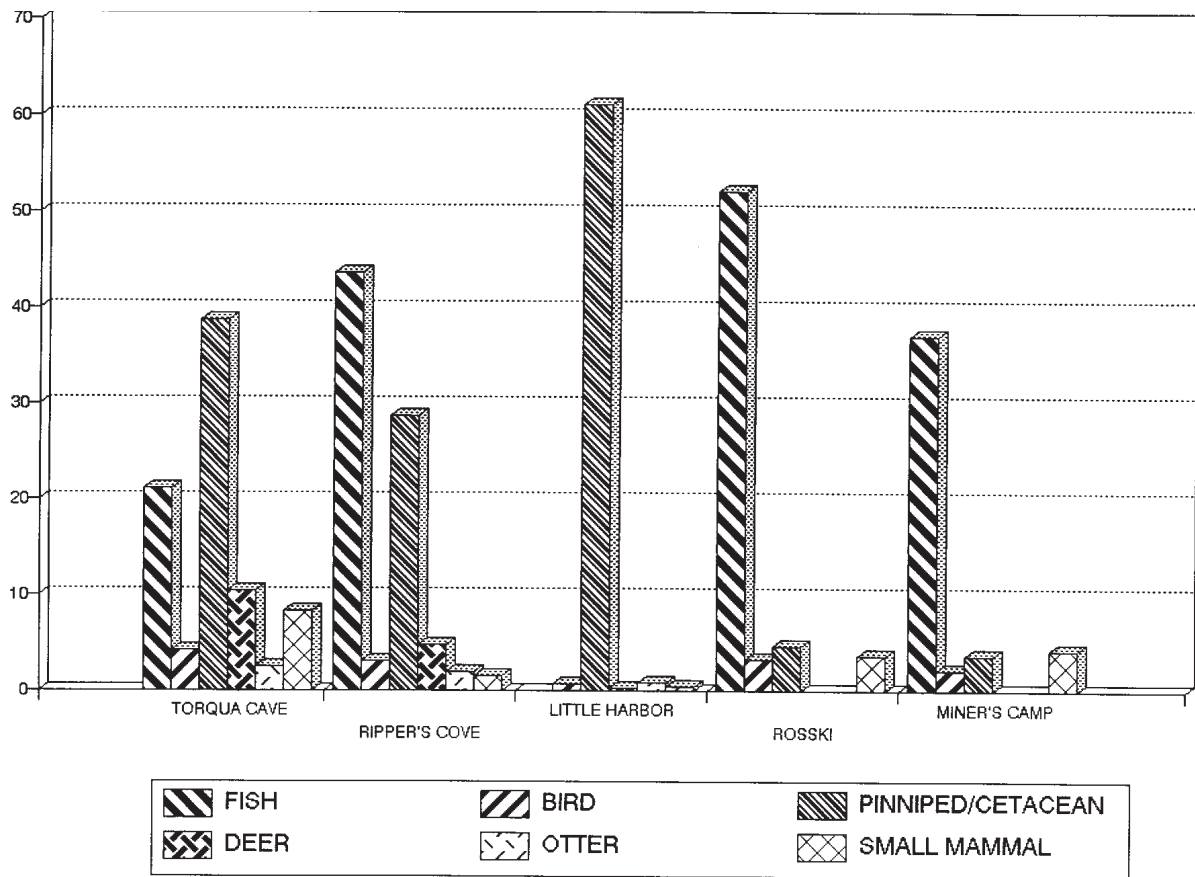


Figure 6. Comparison of five Catalina Island archaeofaunas.

unidentified mammal specimens, 123.65 g (91 percent) was classified as terrestrial mammal. The Miner's Camp project (CA-SCAI-118) (Rosen 1980:53) yielded 63.41 g of bone consisting of 1.33 g of bird, 23.55 g of fish, and 38.52 g of mammal (33.5 g, or 87 percent, was classified as unidentified land mammal).

Other Catalina sites have yielded less detailed faunal data. For example, the Bulrush Canyon site (CA-SCAI-137) produced 351 vertebrate specimens, most of which were from a single male sea otter, along with a few unidentified bird bones, two ruminant teeth (historic), and unidentified fish. The most common faunal resource was shellfish, primarily abalone and limpet (Cottrell et al. 1980:15–17). Further exploration at the Bulrush Canyon site by Rosenthal and her colleagues (Rosenthal

1988) produced 488 identified specimens ascribed to the following: bison (a single element); ground squirrel; otter; deer; harbor seal; island fox; and California sea lion. More than 3 kg of bone was not identified. An associated site, Camp Cactus Road, yielded 179 identified elements from squirrel, otter, and sea lion. These sites lack direct access to the coast and its marine resources.

Certain patterns can now be found in island archaeofaunas. Torqua Cave, Ripper's Cove, and Little Harbor exhibit similar patterns in terms of use of marine mammals. Use of fish is problematic since there are no fish data for Little Harbor. On the other hand, Rosski and Miner's Camp share a markedly different pattern from Torqua Cave, Ripper's Cove, and Little Harbor. While this is not surprising for Miner's Camp located

at high elevation above the central portion of the island, one would expect the Rosski archaeofauna to more closely resemble that of Torqua Cave since both have easy access to the marine resources of the coast, presumably at Little Harbor. The large proportion of unidentified terrestrial mammal bone at both Rosski and Miner's Camp suggests that these archaeofaunas are more inclusive of historic taxa. Although fish were important at these sites, marine mammal remains are relatively scarce. Without recourse to detailed radiocarbon dating, the faunal collections seem to suggest two diachronic occupational patterns on the island. Torqua Cave, Ripper's Cove, Little Harbor, Bulrush Canyon and Camp Cactus Road appear to be primarily prehistoric with brief historic components, while Rosski and Miner's Camp are primarily historic but retain evidence of intensive fishing. Definitive radiocarbon dating would clarify this issue.

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