The first goal was to reconstruct the diet of the prehistoric inhabitants by identifying the main constituents of the coprolites.

The coprolites were typed according to four descriptive categories: fiber, seed, rose hip, and non-fiber. These were used to derive hypotheses about dietary components. For example the presence of cattail root fiber or rose hips suggests a wetland diet, while seed and grasses a dryland diet.

Archaeological excavations at Fish Slough Cave, Owens Valley, California produced more than 300 exceptionally preserved human coprolites (fossilized feces). Analysis of these coprolites provides the direct dietary evidence necessary to understanding prehistoric subsistence patterns.

27 of the coprolites were rehydrated and 53 dry sorted and their constituents tabulated. Cluster analysis was undertaken with the intent to identify the most consistent components of the coprolites and to indicate patterns in resource use that would ultimately reflect seasonal availability or dietary preferences. Although wetland taxa (rose hips, aquatic roots, mussels) available at the slough dominate the sample, the large portion of dryland resources (Asteraceae, Achnatherum, animal bone, and wild rye) identified indicate a dependence on resources located in areas outside Fish Slough. It appears from the diversity observed in the Fish Slough diet that the inhabitants made prudent use of the available resources at a variety of times during the year.

The second goal of the coprolite analysis was to interpret the nutritive value of the diet and whether the diet inferred from the coprolites reflects satisfaction of basic human biological needs.

Was this a healthy diet?

Looking at the nutritional data, the wetland taxa in contrast to the dryland seeds are extremely high in water (e.g., Typha 85% vs. Achnatherum 3.60%). Water is an important nutrient; however in the Fish Slough case availability of potable water negates that need. Furthermore, many of the wetland taxa are low in carbohydrates, fats, and proteins, making them a suboptimal or poor quality food resource. By comparison, the dryland resources are higher both in calories and carbohydrates. However, nutritional research indicates that most plant foods contain compounds known as anti-nutrients that interfere with the digestive processes of metabolism and absorption of nutrients which can result in nutritional stress. Also, diets high in fiber, such as cattail roots (Typha), may affect the bioavailability of some other important nutrients. This does not mean that the inhabitants were undernourished or even starving; in fact it is likely that there were no ill effects for the short term occupant. It does suggest that a prolonged diet high in fiber and low in proteins and fat could have adverse effects on the overall well being of a population.

Nutritional Data for Select Fish Slough Resources