Vagnari 2 Exposure

This exposure reveals >8,500 years of alluvium. Depositional units are evident as well as occasional weathering profiles related to soil formation. The shovel highlights a 2,100 cal. B.P. soil that can be traced regionally in all stream banks and archaeological sites in the area. At the base of the exposure is a gleyed unit containing snail shells indicating ponding in this stream more than 8,500 years ago.

Arroyo Italiano 1 Stratigraphy

Peds		6-1 cm	50%		
Fine Seds	eds, sand rich	3-1 cm	5%		
Peds		4-1 cm	50%		
Peds		9-1 cm	80%		UPPERMOST
Peds		2-1 cm	80%		SOIL
Peds		3-1 cm	60%		
Peds		4-1 cm	70%		
Peds		3-1 cm	60%		
Peds		2-1 cm	40%		
Peds		4-1 cm	60%		
Gravel		3-1 cm	10%		
Gravel		5-1 cm	10%		GRAVELS
Gravel		4-1 cm	50%		
Paleosol	Some Peds	3-1 cm	25%		
Paleosol	Some Peds	3-1 cm	50%		STRONGEST
Paleosol	Some Peds	2-1 cm	60%		DEVOLOPED
Paleosol	Some Peds	3-1 cm	50%	C14	PALEOSOL
Paleosol	Some Peds	3-1 cm	50%		
Paleosol	Some Peds	6-1 cm	80%		
Peds		5-1 cm	70%		
Peds		4-1 cm	60%		
Peds		3-1 cm	60%		
Peds		5-1 cm	50%		
Gravel		3-2 cm	40%	20b	
Gravel		6-1 cm	80%	20a	
Gravel		6-4 cm	30%	19b	GRAVELS
Gravel		3-4 cm	30%	19a	
Gravel		8-4 cm	30%		
Peds		4-1 cm	30%		
Peds		3-1 cm			WEAK
Fine Seds	Some Peds	3-1 cm	15%		SOIL
Peds		2-1 cm	35%		
Gravel		5-3 cm	50%		
Gravel		5-3 cm	30%		GRAVELS
Gravel		6-3 cm	50%		
Fine Seds					
Fine Seds					
Fine Seds					
Fine Seds					
Peds		3-1 cm	95%		
Fine Seds					
Peds		1-0 cm	90%		LOWEST SOIL
Gravel		12-5 cm	80%		
Gravel		8-5 cm	80%		GRAVELS
Fine Seds	clay rich			606715	

Stratigraphic description is aligned with the profile, AMS dates are placed in the profile where they were collected.

This exposure reveals four major flooding events during the last 8,400 years, much fewer than the number of flood units exposed upstream. Here evidence of previous flood events have been destroyed by larger flood events.

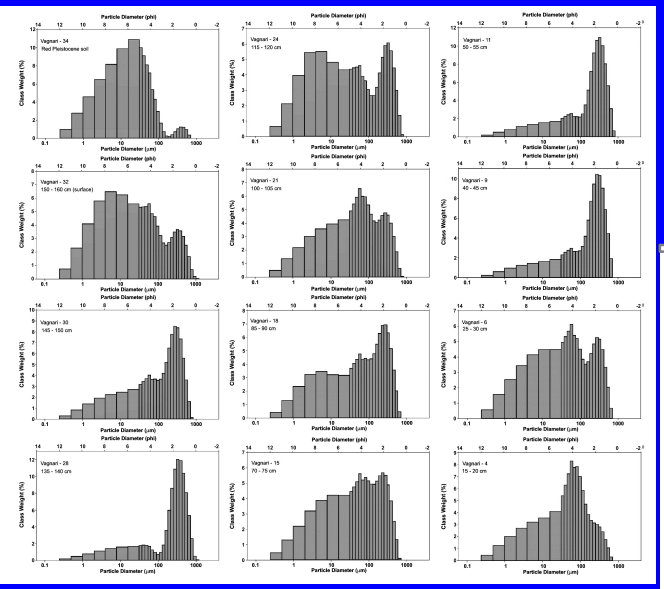
Each cycle was initiated by an erosional event followed by deposition of poorly sorted gravels and then by finer and finer sediments.

Cleaning & Sampling the Exposures

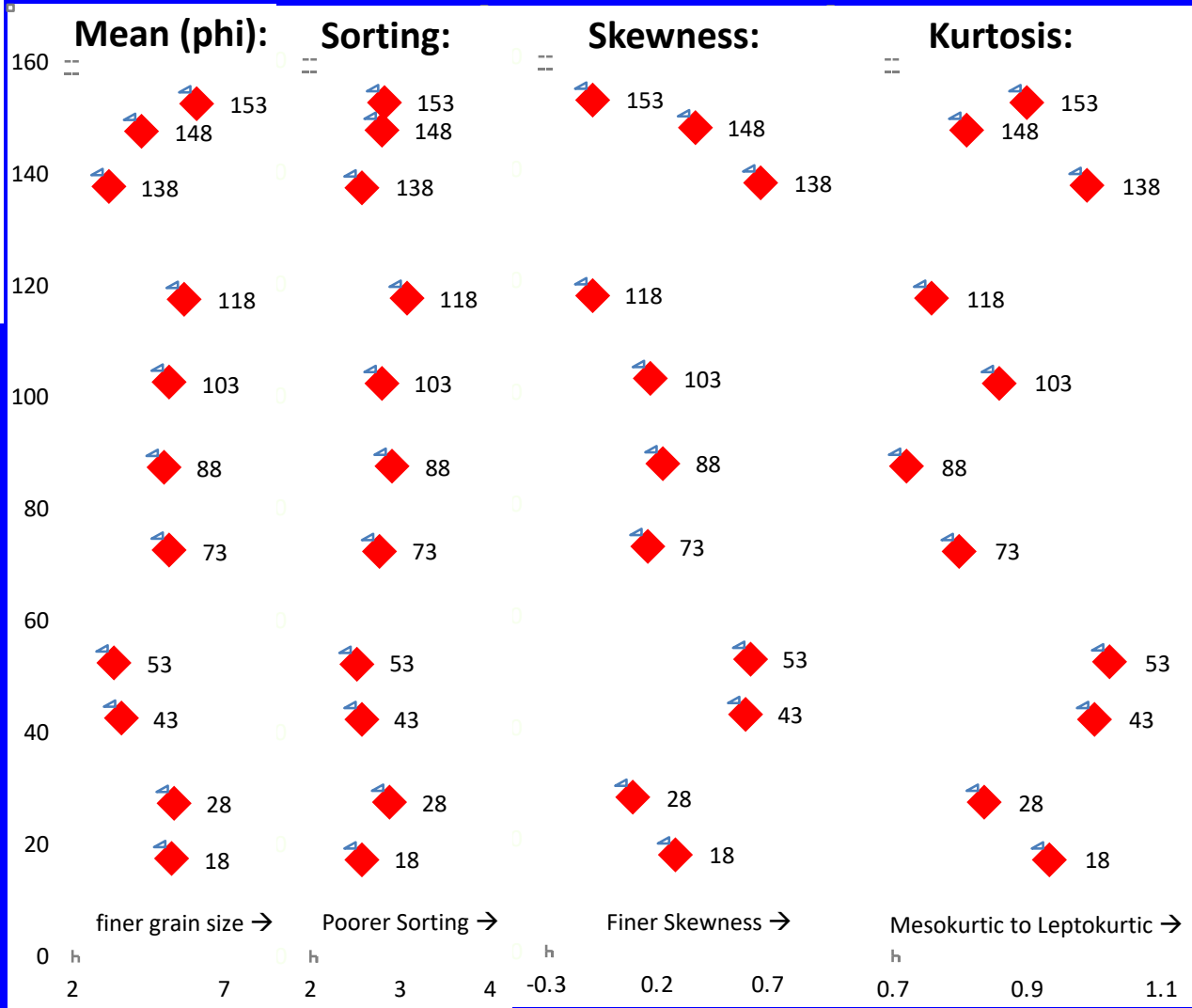
The cleaned exposure at Arroyo Italiano 1 reveals the two major Holocene soils. The upper at the top 1/3 of the meter stick is 2,100 cal yr B.P. and the lower soil (the dark unit in the lower 1/3 of the meter stick) is 8,400 cal yr B.P.

We have collected over 400 sediment samples to be used for grain size and other analysis. We are also interested in lead content of the sediment as an indicator of when people in this region began to fabricate lead artifacts.

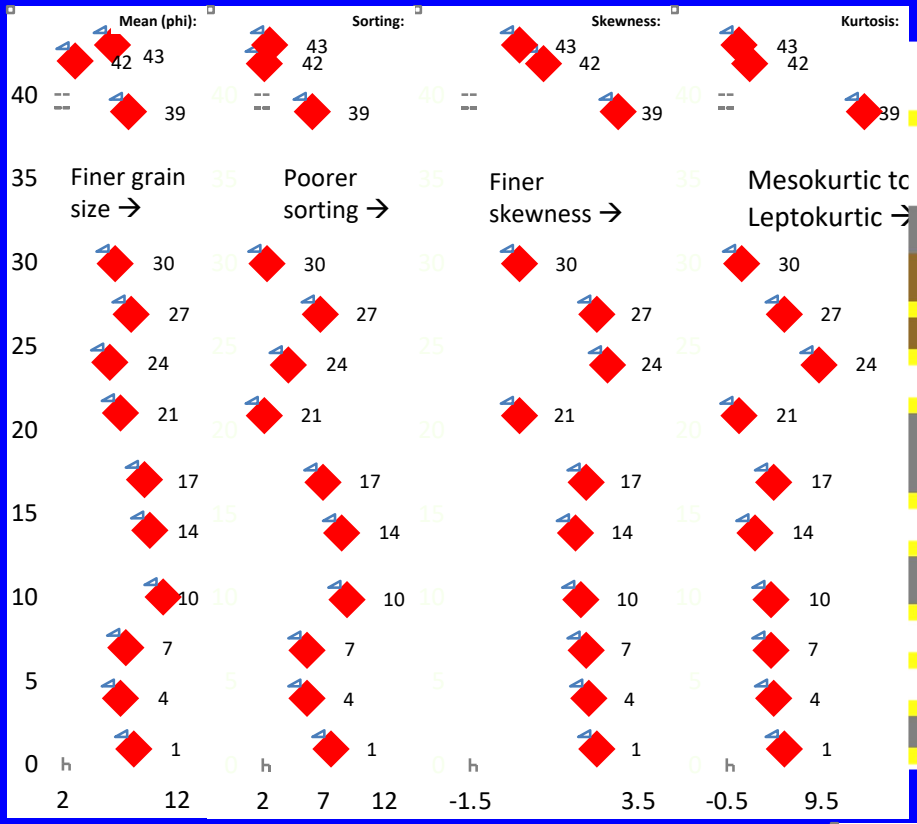
Vagnari 1: Initial Sediment Analyses

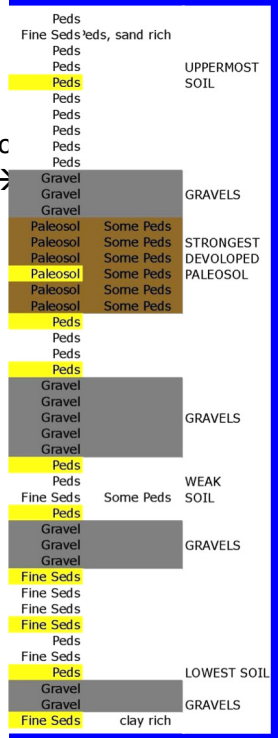


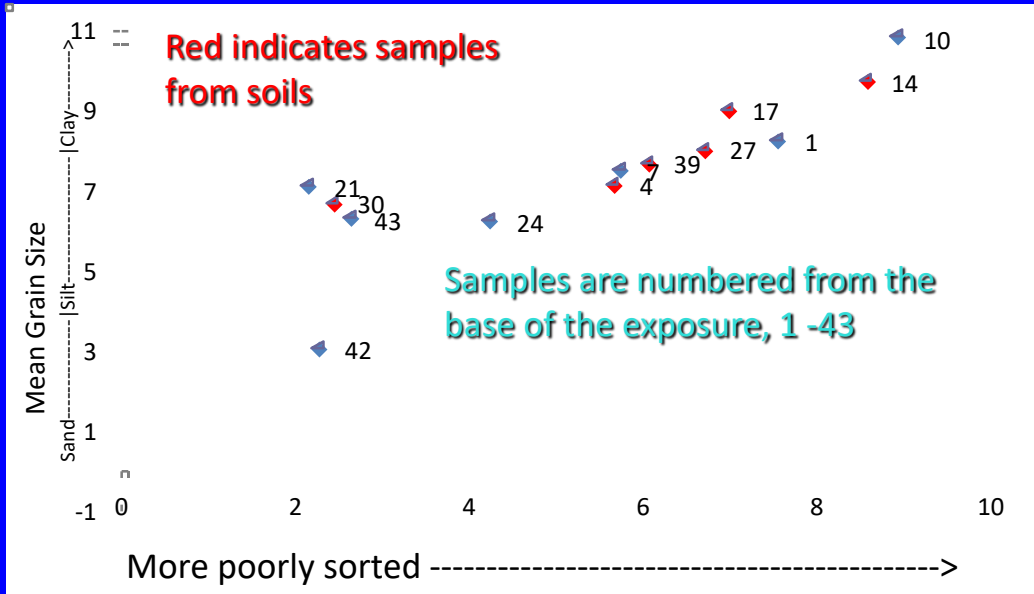
Mastersizer grain size analyses of Vagnari alluvial exposure. The upper left sample is from underlying channel fill that dates to the last interglacial (~150,000) and has been rubified. Sample 34 is near top of Holocene alluvial section, and sample 4 is near the base.



Arroyo Italiano 1: Grain Size Parameters







Arroyo Italiano 1: Mean vs. Sorting