

DEPARTMENT OF THE INTERIOR  
U.S. GEOLOGICAL SURVEY

# **Pliocene planktic foraminifer census data from Deep Sea Drilling Project Holes 366A, 410, 606, and 646B**

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# Pliocene planktic foraminifer census data from Deep Sea Drilling Project Holes 366A, 410, 606, 646B

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## INTRODUCTION

The U. S. Geological Survey is conducting a long-term study of the climatic and oceanographic conditions of the Pliocene. One of the major elements of the study involves an attempt to use the quantitative composition of planktic foraminifer assemblages in conjunction with stable isotope analysis of planktic and benthic foraminifers to estimate sea-surface temperatures and identify major oceanographic boundaries and water masses within the North Atlantic Basin. We anticipate analyzing many samples during the project which will result in a large volume of raw census data. In addition, it is likely that all or some of the census data from individual cores will be incorporated into analyses for more than one report over the course of the project. Therefore we have decided to make the raw census data available in a series of open-file reports that will provide basic data for future work. In this report we present counting categories and raw census data

for planktic foraminifer assemblages in 225 samples from DSDP Holes 366A, 410, 606, and 646B (Fig. 1).

A variety of statistical techniques are being developed to transform census data of foraminifers in Pliocene deep-sea cores into quantitative estimates of Pliocene sea-surface temperatures. Details of statistical techniques, details of taxonomic groupings, and oceanographic interpretations will be presented in more formal publications.

Latitude, longitude, and water depth for each DSDP locality are in Table 1. Counts of variables tabulated in each sample are given in Tables 2-5.

## METHODS

The samples used in this study were washed using low temperature (isotope) procedures. Sediment samples were dried in an oven at  $\leq 50^{\circ}\text{C}$ . The dried bulk sample was disaggregated in a beaker with warm tap water and about 2ml of dilute calgon solution (5 gm calgon to 1 liter water). The beaker was agitated on a shaker/hot plate without heating. Samples were then washed through a  $63\mu$  sieve using a fine spray hose and dried in an oven at  $\leq 50^{\circ}\text{C}$ .

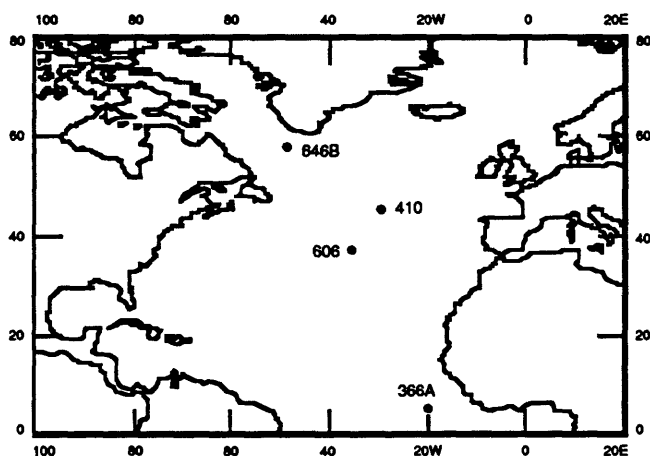


Figure 1 - Location of DSDP Holes covered in this report.

Table 1 - Latitude, longitude, and water depth (in corrected meters) for DSDP Holes shown in Figure 1.

Hole	Latitude	Longitude	Water Depth
366A	05°40.7'N	19°51.1'W	2853
410	45°30.51'N	29°28.56'W	2975
606	37°20.32'N	35°29.99'W	3007
646B	58°12.559'N	48°22.147'W	3450

Many samples required additional treatments with about 10 ml of 10% H<sub>2</sub>O<sub>2</sub> added to the wash in order to obtain clean specimens. As many as 4 treatments were required for some samples.

A split of 300-350 planktic foraminifer specimens was obtained from the ≥149μ size fraction using a Carpc sample splitter. Specimens were identified, sorted, and glued to a standard 60 square micropaleontological slide.

Hole 606 samples were first processed at Brown University using a procedure similar to that described above. One additional H<sub>2</sub>O<sub>2</sub> wash was subsequently done in our lab for these samples because they were not clean.

Hole 646B samples contained a large amount of ice rafted detritus, siliceous material, and other debris. Planktic assemblages were dominated (>90%) by *Neogloboquadrina atlantica*. For ease of sorting, the planktic foraminifers excluding left coiling *N. atlantica* were sorted on a separate slide. The remaining left coiling *N. atlantica* were counted, but not sorted, on the original slide.

## COUNTING CATEGORIES

Taxa included in counting categories and codes used for headings of Tables 2-5 are summarized below. In general, our taxonomic concepts follow Parker (1962; 1967), and Blow (1969). Exceptions to their practices are noted below.

DSDP sample designations are abbreviated in Tables 2-5 as core-section, depth within section in centimeters (eg. 10-5, 34 = core 10, section 5, 34 cm below top of section 5). The depth column lists depth of sample below sea floor in meters.

Code	Taxon (taxa) comments
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Cande	<i>Candeina</i>
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bulls	<i>Globigerina bulloides</i> (d'Orbigny) and <i>G. praebulloides</i> Blow
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falco	<i>Globigerina falconensis</i> Blow
pseud	<i>Globigerina pseudobesa</i> (Salvatorini)
incis	<i>Globigerina incisa</i> (Bronnimann and Resig)
praed	<i>Globigerina praedigitata</i> Parker
woodi	<i>Globigerina woodi</i> Jenkins and <i>G. apertura</i> Cushman
decor	<i>Globigerina decoraperta</i> Takayanagi and Saito
nepen	<i>Globigerina nepenthes</i> Todd
sp. 1	<i>Globigerina</i> sp. 1. Taxon resembles <i>G. falconensis</i> but has reticulate surface texture similar to <i>G. woodi</i> group.
aequi	<i>Globigerinella aequilateralis</i> (Brady)
gluti	<i>Globigerinita glutinata</i> (Egger) s.l.
congl	<i>Globigerinoides conglobatus</i> (Brady)
obliq	<i>Globigerinoides obliquus</i> Bolli and <i>G. extremus</i> Bolli and Bermudez
ruber	<i>Globigerinoides ruber</i> (d'Orbigny)
saccu	<i>Globigerinoides sacculifer</i> (Brady), <i>G. quadrilobatus</i> (d'Orbigny) and <i>G. trilobus</i> (Reuss)
Gnoid	<i>Globigerinoides</i> spp. Representatives of <i>Globigerinoides</i> (usually small) that could not be confidently assigned to <i>G. ruber</i> , <i>G. obliquus</i> (s.l.) or <i>G. conglobatus</i> .
altis	<i>Globoquadrina altispira</i> (Cushman and Jarvis)
venez	<i>Globoquadrina venezuelana</i> (Hedberg)
cibao	<i>Globorotalia cibaoensis</i> Bermudez

conom	<i>Globorotalia conomiozea</i> Kennett	acost	<i>Neogloboquadrina acostaensis</i> (Blow) and <i>N. continuosa</i> (Blow)
crass	<i>Globorotalia crassaformis</i> (Galloway and Wissler). This category includes <i>G. ronda</i> Blow and <i>G. oceanica</i> Cushman and Bermudez. Specimens with a distinct keel on the entire ultimate whorl are tabulated separately under "kcras".	satca	<i>Neogloboquadrina atlantica</i> (Berggren) left-coiling. See Poore and Berggren, 1975 for discussion of this highly variable taxon.
kcras	This category includes <i>G. crassaformis</i> with fully keeled ultimate whorl.	datca	<i>Neogloboquadrina atlantica</i> (Berggren) right-coiling
viola	<i>Globorotalia viola</i> Blow. Both encrusted ( <i>G. crassula</i> of Blow, 1969) and non-encrusted specimens are included.	humér	<i>Neogloboquadrina humerosa</i> (Takayanagi and Saito)
hirsu	<i>Globorotalia hirsuta</i> (d'Orbigny)	spach	<i>Neogloboquadrina pachyderma</i> (Ehrenberg) left-coiling. Relatively small, compact <i>Neogloboquadrina</i> with 4-5 chambers in the ultimate whorl, kummerform ultimate chamber, and a slightly to distinct oval equatorial outline are included here. Separating small left-coiling <i>N. atlantica</i> from large left-coiling <i>N. pachyderma</i> is arbitrary in many North Atlantic high-latitude sites.
plata	<i>Globorotalia inflata</i> (d'Orbigny) and <i>G. puncticulata</i> (Deshayes)	dpach	<i>Neogloboquadrina pachyderma</i> (Ehrenberg) right-coiling. This category is restricted to specimens with 4 chambers in the ultimate whorl. Right-coiling specimens close to <i>N. pachyderma</i> that have more than 4 chambers in the ultimate whorl are tabulated as "dupac".
marga	<i>Globorotalia margaritae</i> Bolli and Bermudez	dupac	This category is used for specimens of right-coiling <i>Neogloboquadrina</i> with more than four chambers in the ultimate whorl that are transitional between <i>N. pachyderma</i> and <i>N. acostaensis</i> or <i>N. atlantica</i> .
menar	<i>Globorotalia menardii</i> (Parker, Jones, and Brady) s.l. This category includes various members of the <i>G. menardii</i> lineage such as <i>G. limbata</i> (Fornasini) and <i>G. miocenica</i> Palmer.	Neogl	This category includes <i>Neogloboquadrina</i> that were not identified to specific level but generally does not include representatives of <i>N. atlantica</i> .
pumil	This category includes small forms with 5-7 chambers in the ultimate whorl that are similar to <i>Globorotalia pumilio</i> Parker, <i>G. praepumilio</i> (Parker) and <i>G. pseudopumilio</i> Bronnimann and Resig.	Orbul	<i>Orbulina universa</i> d'Orbigny
scitu	<i>Globorotalia scitula</i> (Brady) s.l. This category includes various members of the <i>G. scitula</i> group, for example <i>G. subscitula</i> Conato.	Sphae	<i>Sphaeroidinella</i> and <i>Sphaeroidinellopsis</i>
toeat	<i>Globorotalia tosaensis</i> Takayanagi and Saito and <i>G. truncatulinoides</i> (d'Orbigny)		
tumid	<i>Globorotalia tumida</i> (Brady) s.l. This category includes <i>G. plesiolumida</i> Blow and Banner.		
hexag	<i>Globorotaloides hexagona</i> (Natland)		

quinq *Turborotalita quinqueloba* (Natl-  
land)

OTHER This category includes unidentified  
specimens and taxa that are rare  
within assemblages from the cores.

TOTAL Total number of planktic forams  
PLANK in the counting split.

frags fragments of planktic foraminifers

bform benthic foraminifers

#### ACKNOWLEDGEMENTS

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#### REFERENCES

- Blow, W. H., 1969, Late middle Eocene to Recent planktonic foraminiferal biostratigraphy. In Bronnimann, P. and Renz, H. H., (Eds), *Proceedings of First Planktonic Conference*: Leiden (E. J. Brill), p. 199-422.
- Parker, F. L., 1962, Planktonic foraminiferal species in Pacific sediments, *Micro-paleontology*, v. 8, p. 219-254.
- \_\_\_\_\_, 1967, Late Tertiary biostratigraphy (Planktonic Foraminifera) of tropical Indo-Pacific deep-sea cores: *Bulletins of American Paleontology*, v. 52, p. 115-208.
- Poore, R. Z., and Berggren, W. A., 1975, The morphology and classification of *Neoglobobulimina atlantica* (Berggren), *Journal of Foraminiferal Research*, v. 5, p. 77-84.

SAMPLE	DEPTH	Cande	bulls	falco	pseud	incis	praed	woodi	decor	nepen	sp. 1	aequi	gluti	congl	obliq	ruber	saccu	Gnoid	altis	venez	cibao	crass	hirsu	plata	marga
5-2,86	36.85	0	7	1	1	0	0	6	3	0	1	2	14	0	18	54	43	0	0	0	0	1	0	7	0
5-4,86	39.86	0	4	0	4	1	1	19	5	0	0	7	16	1	25	39	56	0	0	0	0	0	0	1	0
6-3,93	47.93	1	5	3	0	0	1	11	2	0	0	3	7	9	58	18	29	7	15	3	0	0	4	11	0
7-3,86	56.86	2	10	0	1	4	0	4	0	2	0	2	11	3	45	0	53	13	26	1	0	9	0	0	0
8-4,121	68.71	1	19	4	2	0	1	8	16	13	0	6	5	3	26	0	39	7	8	0	0	0	0	9	9
8-6,127	71.77	3	6	0	0	0	1	16	10	1	0	5	7	5	47	0	49	4	14	1	0	0	0	7	7
9-2,146	75.46	0	3	0	4	1	0	6	6	9	0	6	9	1	45	4	49	7	15	2	0	0	0	9	9
9-5,121	79.71	1	1	0	3	0	1	2	8	1	0	8	3	0	44	0	79	7	8	4	0	0	0	9	9
10-1,189	83.89	4	9	0	5	0	0	8	5	2	0	5	0	1	71	2	76	0	13	9	0	0	0	0	0
11-2,131	94.31	1	3	2	1	0	1	6	0	7	0	3	4	0	42	1	50	2	8	2	11	0	0	0	0
11-5,94	98.44	6	1	0	3	0	0	3	0	4	0	2	4	0	56	4	50	10	23	0	11	0	0	0	0

SAMPLE	menar	pumil	scitu	tumid	hexag	acost	humer	dpach	dupac	Neogl	Orbul	Sphae	Other	PLANK	frags
5-2,86	71	10	5	0	0	3	26	1	1	0	4	3	3	1530	42
5-4,86	56	11	4	0	0	3	19	0	0	0	9	0	3	2992	85
6-3,93	37	3	0	3	8	9	20	1	3	0	5	5	3	2040	57
7-3,86	37	0	0	4	9	20	19	0	1	11	2	10	2	2550	73
8-4,121	69	0	4	1	25	4	1	0	1	0	8	11	4	2006	55
8-6,127	66	0	0	2	3	8	9	0	1	0	2	17	2	2448	70
9-2,146	40	0	2	14	0	10	7	0	3	0	13	20	3	3094	88
9-5,121	51	0	0	9	5	1	5	0	4	0	27	15	4	1258	33
10-1,189	44	0	2	15	0	2	0	0	0	0	25	15	2	2618	75
11-2,131	87	0	3	0	0	4	0	0	0	2	13	12	0	5950	175
11-5,94	33	0	2	0	9	5	0	0	0	0	20	17	0	5610	165

TOTAL

SAMPLE	DEPTH	bulls	falco	praed	woodi	decor	aequi	gluti	saccu	Gnoid	crass	hirsu	plata	menar	scitu	acost	spach	dpach	dupac	Orbul	Sphae	quinq	Other	PLANK	frags	bform	TOTAL
14-2,134	124.31	61	26	0	16	2	9	77	0	5	29	0	53	0	12	5	5	12	9	5	0	3	5	334	17	3	
14-3,101	125.51	38	18	0	11	1	2	39	0	4	36	1	17	0	13	15	81	12	15	3	0	7	1	314	23	6	
14-4,31	126.31	22	11	0	5	0	0	32	0	1	16	1	37	0	9	43	86	34	39	3	0	3	6	348	18	6	
14-5,87	128.37	51	9	0	13	1	7	60	0	6	21	5	11	0	13	49	11	40	47	6	0	1	6	357	12	2	
15-1,14	131.14	51	3	0	19	2	5	19	2	9	8	11	38	3	15	48	6	34	51	2	0	6	6	338	33	3	
15-2,19	132.69	45	20	0	15	0	1	23	0	2	15	11	89	0	4	32	20	21	23	5	0	4	7	337	39	4	
15-4,68	136.18	48	23	2	18	1	1	26	0	7	4	12	51	0	19	19	4	26	28	1	0	4	1	295	42	4	
15-5,11	137.11	68	33	0	16	1	2	22	0	12	2	12	53	1	22	21	2	28	25	1	0	2	3	326	26	3	
15-6,26	138.76	66	32	0	21	0	1	18	0	8	0	8	34	0	18	21	0	16	24	1	0	0	4	272	23	0	
16-2,41	142.41	25	19	0	22	0	0	22	0	2	29	0	53	0	7	43	10	27	29	3	0	4	4	299	25	2	
16-4,97	145.97	35	12	0	12	0	4	32	1	5	4	4	47	1	15	41	7	31	45	0	0	2	3	301	35	3	
16-5,25	146.75	44	10	0	19	1	2	22	0	4	11	6	49	0	27	35	9	42	51	2	0	5	12	351	43	7	

SAMPLE	DEPTH	bulls	falco	pseud	incis	praed	woodi	decor	nepen	aequi	sp.	1	gluti	congl	obliq	ruber	saccu	Gnoid	altis	venez	conom	kras	viola	hirsu	plata
9-1,36	70.41	33	32	4	0	0	18	1	0	3	1	47	0	5	47	0	20	0	0	1	0	17	0	0	0
9-1,98	71.03	41	57	4	0	2	15	3	0	3	2	31	1	2	37	0	8	0	0	0	0	7	0	0	11
9-2,36	71.91	44	45	1	1	0	14	0	0	3	2	16	2	4	49	2	1	0	0	0	9	92	5	9	0
9-2,98	72.53	28	51	3	2	0	25	1	0	2	0	42	0	1	42	1	6	0	0	0	0	4	21	0	0
9-3,36	73.41	53	35	1	3	0	37	7	0	1	0	46	4	0	40	0	2	0	0	0	0	53	12	2	0
9-3,98	74.03	31	12	7	2	1	44	4	0	6	1	63	2	4	44	3	4	0	0	0	0	21	17	1	0
9-4,36	74.91	43	50	8	0	0	37	2	0	6	0	48	1	0	21	0	2	0	0	1	12	6	0	0	35
9-4,98	75.53	43	57	6	3	0	20	3	0	8	0	67	1	1	18	0	1	0	0	0	0	16	4	0	40
9-5,36	76.41	19	25	2	1	0	29	0	0	6	0	29	3	2	9	0	4	0	0	0	0	52	7	0	18
9-5,98	77.03	37	33	10	0	1	49	6	1	4	2	45	0	1	34	2	6	0	0	0	0	26	5	0	20
9-6,36	77.91	47	42	5	3	0	13	5	0	5	1	48	2	1	35	1	1	0	0	0	0	14	12	0	31
9-6,98	78.53	35	27	6	1	0	33	0	0	11	2	52	1	2	28	0	10	0	0	0	0	17	24	0	12
10-1,98	80.63	38	19	7	1	1	28	3	0	7	1	48	1	2	10	0	5	0	0	0	0	75	9	0	2
10-1,98R	80.63	22	12	4	0	2	20	2	0	6	0	37	0	0	8	0	2	0	0	0	0	55	3	0	4
10-2,98	82.13	23	37	3	0	2	29	4	0	7	2	28	1	6	12	20	8	0	0	0	0	29	4	0	34
10-3,98	83.63	63	47	1	0	1	36	2	0	5	0	32	0	2	19	2	1	0	0	0	0	17	10	0	1
10-4,98	85.13	35	34	3	1	1	42	10	0	5	1	27	0	11	31	9	9	0	0	0	0	33	1	11	0
10-5,98	86.63	40	62	1	0	0	25	9	0	11	0	38	2	6	35	1	7	0	0	0	0	1	0	18	0
10-6,98	88.13	48	55	0	0	0	36	8	0	4	2	29	0	7	25	5	0	0	0	0	0	15	7	1	0
11-1,9	89.34	47	29	6	0	0	30	8	0	6	3	21	0	8	41	8	3	0	0	0	0	11	0	11	0
11-1,29	89.54	38	26	5	0	0	45	5	0	9	1	22	3	5	28	16	3	0	0	0	0	10	0	12	0
11-1,59	89.84	20	21	5	1	0	43	5	0	9	0	23	0	21	43	4	0	0	0	0	0	22	5	13	0
11-1,98	90.23	21	24	2	2	0	47	5	0	8	1	26	0	13	29	4	3	0	0	0	0	11	10	8	0
11-1,129	90.54	37	35	9	2	1	32	1	0	11	3	21	1	11	36	14	3	0	0	0	0	26	4	4	0
11-1,141	90.66	38	32	4	4	0	35	2	0	9	4	11	2	9	44	18	6	0	0	0	0	15	0	3	0
11-2,21	90.96	26	30	2	0	0	55	3	0	11	2	20	0	12	36	15	6	0	0	0	0	11	2	5	0
11-2,63	91.38	28	28	5	0	1	39	1	0	7	0	35	0	8	23	6	6	0	0	0	0	10	5	3	0
11-2,98	91.73	24	34	8	1	2	28	3	0	7	0	17	2	10	16	4	3	0	0	0	0	28	3	7	0
11-2,131	92.06	28	37	10	1	2	37	3	0	14	0	45	0	7	17	7	8	0	0	0	0	10	3	9	0
11-3,22	92.47	34	45	6	1	2	34	4	0	10	0	38	0	31	23	11	4	0	0	0	0	7	2	10	0
11-3,58	92.83	52	36	5	5	0	37	2	0	8	1	29	5	25	32	5	12	0	0	0	0	5	0	12	0
11-3,140	93.65	24	27	8	0	2	51	0	0	8	1	36	2	17	16	19	5	0	0	0	0	28	0	3	0
11-4,20	93.95	30	55	3	0	0	40	7	0	7	0	33	0	4	11	1	0	0	0	0	0	29	2	17	0
11-4,79	94.54	34	28	4	0	3	35	1	0	9	0	17	0	12	12	9	1	0	0	0	0	29	4	0	0
11-4,120	94.95	37	46	5	0	1	35	5	0	9	0	22	3	26	14	7	1	0	0	0	0	5	0	1	0
11-5,20	95.45	44	32	8	9	1	29	5	0	10	2	47	0	12	26	15	4	0	0	0	0	18	1	5	0
11-5,59	95.84	0	23	9	3	2	48	5	0	10	0	26	0	8	10	17	7	0	0	0	0	31	0	9	0
11-5,80	96.05	39	63	4	1	0	53	8	0	4	0	30	1	17	25	2	5	0	0	0	0	22	1	11	0
11-5,119	96.44	28	42	7	0	2	62	2	0	12	3	40	1	11	16	12	8	0	0	0	0	49	3	5	0
11-6,21	96.96	10	13	8	0	4	29	0	0	6	3	26	1	8	9	17	12	0	0	0	0	64	4	3	0



SAMPLE	TOTAL																			
	marga	menar	pumil	scitu	tocat	tumid	acost	satca	datca	humer	spach	dpach	dupac	Orbul	Sphae	quinq	Other	PLANK	frags	bform
9-1,36	0	0	15	6	11	0	8	0	0	2	0	11	16	2	0	0	5	305	41	1
9-1,98	0	0	0	8	0	0	12	0	0	0	1	19	34	3	0	0	7	308	22	3
9-2,36	0	0	18	1	0	9	2	0	1	0	0	4	7	40	0	0	9	390	38	1
9-2,98	0	0	33	12	0	0	8	0	0	0	0	0	5	0	0	0	14	301	61	2
9-3,36	0	0	6	4	0	0	6	0	5	0	1	8	8	0	0	0	9	343	50	2
9-3,98	0	0	19	6	0	1	2	1	2	0	0	2	4	3	1	0	5	319	85	3
9-4,36	0	2	0	11	0	0	0	8	2	0	0	6	4	22	0	1	11	339	25	5
9-4,98	0	0	8	10	0	0	12	2	9	0	0	16	14	3	0	0	7	369	13	4
9-5,36	0	0	0	14	1	0	13	6	2	0	2	13	21	13	0	0	13	304	22	3
9-5,98	0	1	10	7	0	0	0	0	0	0	0	2	4	16	0	0	3	325	26	6
9-6,36	0	0	13	8	0	0	1	0	1	0	0	2	2	3	0	0	14	310	60	0
9-6,98	0	0	12	7	0	0	4	1	7	0	0	9	12	3	0	0	8	324	42	3
10-1,98	0	0	5	5	0	0	11	1	1	0	0	6	9	12	0	0	9	316	30	2
10-1,98R	0	0	0	3	0	0	10	2	1	0	0	3	10	7	0	1	8	222	14	1
10-2,98	0	4	0	5	0	0	21	1	5	0	3	8	3	7	0	3	8	317	38	0
10-3,98	0	0	0	5	0	0	3	4	6	0	0	5	0	2	0	0	6	309	32	1
10-4,98	0	0	7	7	1	0	2	0	4	0	1	1	6	2	0	0	13	308	30	2
10-5,98	0	0	0	3	0	0	4	0	3	0	0	7	10	0	0	0	20	331	36	3
10-6,98	0	0	1	4	0	0	2	0	1	1	0	2	2	2	0	0	10	313	32	6
11-1,9	0	0	0	9	0	0	0	1	2	0	0	9	2	4	0	0	6	321	39	1
11-1,29	0	0	3	2	0	0	4	0	1	0	0	5	9	4	0	0	10	295	32	1
11-1,59	0	0	1	3	0	0	0	0	2	0	0	4	7	3	0	0	4	294	55	8
11-1,98	0	0	0	5	0	0	4	0	4	0	0	13	6	6	0	0	6	304	33	2
11-1,129	0	3	0	3	0	0	1	0	2	0	0	8	11	5	0	0	12	345	75	1
11-1,141	0	0	0	3	0	0	4	0	4	0	0	3	3	8	0	0	5	312	55	1
11-2,21	0	2	0	3	0	0	2	0	2	0	1	5	8	3	0	0	7	297	45	2
11-2,63	0	1	0	8	0	0	2	1	0	0	0	2	4	4	0	0	8	303	50	3
11-2,98	0	0	1	6	0	0	5	0	1	0	2	8	15	0	0	0	9	312	40	3
11-2,131	0	0	0	0	0	0	15	0	1	0	0	2	9	5	0	0	12	333	90	3
11-3,22	0	0	3	5	4	0	8	0	0	0	0	1	7	3	0	0	13	343	53	3
11-3,58	0	1	13	4	1	0	6	0	1	0	0	1	6	3	0	0	8	319	40	5
11-3,140	0	1	10	6	0	0	18	0	0	0	0	3	10	5	0	1	4	318	110	4
11-4,20	0	0	0	1	0	0	9	0	4	0	0	1	4	5	0	0	9	332	82	2
11-4,79	0	0	0	1	2	0	5	0	4	0	1	10	4	4	1	0	5	305	65	3
11-4,120	0	0	8	4	0	0	1	0	0	0	0	0	1	6	0	0	6	301	70	2
11-5,20	0	0	0	3	0	0	9	0	0	0	0	4	5	7	0	0	10	327	100	3
11-5,59	0	0	1	5	0	0	11	1	0	0	0	11	23	9	0	0	10	295	80	3
11-5,80	0	1	3	14	0	0	9	0	0	0	0	8	8	1	0	0	10	345	100	4
11-5,119	0	2	3	4	0	0	15	0	0	0	0	3	4	3	1	0	10	350	75	2
11-6,21	0	3	9	2	0	0	19	0	2	0	1	14	20	4	0	0	8	299	65	3

SAMPLE	DEPTH	bulls	falco	pseud	incis	praed	woodi	decor	nepen	aequi	sp. 1	gluti	congl	obligh	ruber	saccul	gnoid	altis	venez	conom	crass	kras	viola	hirsu	plata
11-6,56	97.31	29	17	3	0	1	54	3	0	15	3	33	0	5	16	14	4	1	0	0	43	8	6	0	1
11-cc,13	97.54	30	70	2	0	1	41	2	0	10	0	29	0	14	18	16	11	4	0	0	42	4	5	0	16
12-1,98	99.73	34	72	5	0	2	29	0	0	1	0	33	0	10	21		10	23	14	0	31	1	3	0	5
12-1,132	100.07	34	53	6	1	0	36	0	0	8	1	43	1	11	11	6	3	0	0	0	35	2	6	0	11
12-2,37	100.62	27	68	4	0	1	15	3	0	10	2	29	0	22	32	10	5	3	0	0	33	6	9	0	7
12-2,80	101.05	23	80	3	0	2	20	2	0	5	2	37	0	11	10	2	9	0	4	0	40	7	5	0	28
12-2,119	101.44	35	62	4	0	0	42	2	0	1	0	29	1	9	6	5	2	1	0	0	37	10	2	0	47
12-3,5	101.80	33	40	1	0	1	35	0	0	5	3	30	0	21	33	5	2	5	1	0	28	7	1	0	56
12-3,35	102.10	30	43	2	0	1	23	2	0	5	8	31	3	20	9	1	9	7	2	0	29	4	1	0	92
12-3,80	102.55	24	38	5	0	0	27	0	0	9	2	31	1	9	19	5	6	3	0	0	17	0	4	0	50
12-3,119	102.94	36	38	3	0	1	25	1	0	6	2	30	3	16	24	3	6	2	0	0	23	4	3	1	44
12-4,5	103.30	39	46	6	0	0	30	4	0	3	2	25	0	17	17	10	9	3	0	0	6	1	0	8	28
12-4,37	103.63	50	49	2	1	0	33	1	0	4	2	17	3	9	0	2	5	8	0	0	0	0	0	32	60
12-4,90	104.15	49	45	3	1	0	32	0	0	4	3	23	0	4	14	5	4	6	0	0	0	0	0	38	54
12-4,119	104.44	36	57	2	0	0	47	0	0	7	0	25	1	11	9	7	2	0	0	0	2	0	0	60	3
12-5,5	104.80	35	62	2	6	0	31	3	0	7	2	27	0	13	15	10	3	1	0	0	2	0	0	59	0
12-5,36	105.11	44	51	2	0	1	35	0	0	4	0	16	2	16	10	8	1	0	0	0	36	0	3	19	0
12-5,80	105.55	35	63	3	0	0	28	2	0	2	3	18	2	11	10	21	1	20	0	0	11	0	1	21	0
12-5,118	105.93	35	41	0	0	3	28	0	0	3	0	28	0	8	26	1	1	32	20	0	0	0	0	18	2
12-6,54	106.79	29	42	2	0	2	45	3	0	7	1	37	2	15	16	3	1	2	0	0	0	0	0	23	1
12-6,86	107.23	35	56	6	0	1	34	2	0	5	2	40	2	9	37	7	5	0	0	0	0	0	3	39	2
13-1,20	108.45	33	55	2	0	1	64	2	0	5	0	22	1	20	35	1	3	1	0	0	0	0	0	20	0
13-1,79	109.04	16	64	2	0	2	73	1	0	5	1	15	0	7	30	2	6	0	0	0	0	0	0	46	0
13-1,119	109.44	14	89	1	1	1	27	1	0	5	11	21	0	12	24	3	2	1	0	0	0	0	0	28	1
13-2,20	109.95	20	83	2	0	0	51	1	0	5	1	21	1	22	22	6	14	0	0	0	0	0	0	26	0
13-2,59	110.34	17	95	3	15	0	36	1	0	7	4	24	0	4	22	2	3	1	0	0	0	0	0	36	0
13-2,110	110.85	33	95	2	0	0	22	0	0	1	0	20	0	6	27	12	19	2	0	0	0	0	0	15	0
13-3,20	111.45	13	92	0	0	1	52	2	0	2	7	13	0	6	29	2	8	1	0	0	0	0	0	16	0
13-3,80	112.05	20	75	3	1	0	32	0	0	3	2	18	0	4	14	0	6	13	10	0	0	0	0	0	0
13-3,110	112.35	14	83	0	1	2	27	0	0	3	3	19	0	14	28	5	8	0	0	0	0	0	0	15	0
13-4,20	112.95	26	100	0	2	1	40	2	0	6	3	22	2	8	23	2	11	3	0	0	0	0	1	10	0
13-4,81	113.56	19	91	0	5	1	48	5	0	6	3	25	1	15	14	5	24	1	0	0	1	0	0	6	0
13-4,119	113.94	29	83	1	2	1	59	0	0	5	1	15	1	12	23	1	13	0	0	0	0	0	1	10	0
13-5,20	114.45	20	72	0	1	0	36	6	0	0	1	15	0	22	33	1	21	0	0	0	0	0	0	15	0
13-5,80	115.05	21	79	3	11	0	54	4	0	2	1	23	0	9	24	3	13	0	0	0	0	0	0	29	0
13-5,120	115.45	24	91	1	2	0	38	4	0	2	3	24	1	25	17	0	23	2	0	0	0	0	0	25	0
13-6,20	115.95	24	75	1	6	1	33	5	0	8	1	36	0	10	15	0	18	0	0	0	1	0	0	45	0
13-6,80	116.55	31	67	2	1	0	49	1	0	7	0	24	0	14	27	0	21	0	0	0	0	0	0	11	0
14-1,38	118.13	26	74	3	3	0	56	1	0	1	2	31	1	26	21	2	12	27	0	0	1	1	0	13	6
14-1,80	118.55	18	78	0	6	1	51	3	0	5	3	8	0	17	12	2	14	5	0	1	5	2	0	12	32
14-1,119	118.94	5	88	5	6	1	41	1	0	6	0	33	5	26	29	2	16	0	0	0	12	1	0	21	12

SAMPLE	TOTAL															frags	bform
	marga	menar	pumil	scitu	tocat	tunid	acost	satca	datca	humer	spach	dpach	dupac	Orbul	Sphae	quinq	Other
11-6,56	0	0	4	5	0	0	22	0	0	0	1	11	29	13	0	0	7
11-cc,13	0	2	2	6	0	0	12	0	0	0	0	5	6	4	0	2	6
12-1,98	0	1	0	12	0	0	7	0	0	0	0	1	6	6	0	0	6
12-1,132	0	1	0	4	0	0	12	0	0	0	0	5	5	0	0	2	9
12-2,37	0	0	0	10	1	0	7	0	0	0	0	5	1	3	0	0	8
12-2,80	0	0	5	4	0	0	6	0	0	0	1	1	0	2	1	0	11
12-2,119	0	0	1	3	0	1	2	0	0	0	0	2	10	2	3	0	9
12-3,5	0	1	0	3	0	0	13	0	0	0	0	6	10	1	1	0	7
12-3,35	0	0	0	2	0	0	10	0	0	0	0	2	4	1	4	1	7
12-3,80	0	0	1	5	0	0	17	0	0	0	0	10	18	0	4	0	8
12-3,119	0	0	0	3	0	0	13	0	0	0	0	3	23	0	4	2	5
12-4,5	3	0	0	3	0	0	13	0	1	0	1	8	15	2	5	0	5
12-4,37	0	1	0	2	0	0	10	0	1	0	1	10	14	0	2	0	4
12-4,90	0	0	0	8	0	0	11	0	0	0	0	4	11	0	6	3	4
12-4,119	0	2	0	7	0	0	9	0	2	0	0	5	15	1	8	0	3
12-5,5	0	0	0	3	0	0	24	0	0	0	0	8	17	2	12	1	5
12-5,36	0	0	0	0	0	0	17	0	0	0	1	9	12	0	3	0	7
12-5,80	0	2	0	1	0	0	22	0	0	0	0	11	16	3	2	0	6
12-5,118	3	1	0	3	0	0	13	0	0	0	0	5	12	2	6	1	5
12-6,54	0	6	0	5	0	0	22	0	3	0	0	17	20	2	8	0	9
12-6,86	0	5	0	6	0	0	17	0	0	0	0	8	10	1	0	0	7
13-1,20	0	1	0	6	0	0	15	0	3	0	0	8	12	0	14	0	5
13-1,79	0	0	0	5	0	0	12	0	1	0	0	13	10	4	5	0	9
13-1,119	0	3	0	6	0	0	25	0	0	0	1	2	8	1	12	0	11
13-2,20	0	4	0	6	0	0	14	1	2	0	0	9	13	0	10	1	10
13-2,59	0	1	0	2	0	0	26	0	0	0	0	1	10	0	9	0	4
13-2,110	0	1	0	13	0	0	13	1	4	0	0	3	9	2	9	0	6
13-3,20	0	2	2	4	0	0	15	1	3	0	0	1	16	1	9	0	3
13-3,80	0	13	0	2	0	0	28	1	2	0	0	8	18	0	12	0	9
13-3,110	0	4	2	2	0	0	33	0	7	0	0	4	21	1	5	1	7
13-4,20	0	1	0	6	0	0	21	0	0	0	0	2	8	0	13	1	9
13-4,81	0	1	4	3	0	0	26	0	1	0	0	2	8	0	8	0	9
13-4,119	0	3	0	3	0	0	18	0	0	0	0	3	21	3	4	0	6
13-5,20	0	6	0	4	0	0	17	0	1	0	0	2	12	0	9	2	5
13-5,80	0	4	0	1	0	0	15	0	0	0	0	2	17	1	7	0	4
13-5,120	0	4	0	3	0	0	14	0	0	0	0	0	7	2	8	1	4
13-6,20	0	3	0	3	0	0	24	0	0	0	0	0	15	1	0	1	3
13-6,80	0	3	0	0	0	0	15	0	0	0	0	6	12	4	6	1	7
14-1,38	0	2	0	1	0	0	11	0	0	0	0	4	19	0	1	0	3
14-1,80	0	1	0	2	0	0	24	0	0	0	0	3	11	1	5	0	4
14-1,119	0	0	0	1	0	0	5	0	0	0	0	0	4	0	3	1	4

SAMPLE	DEPTH	bulls	falco	pseud	incis	praed	woodi	decor	nepen	aequi	sp. 1	gluti	congl	obliliq	ruber	saccu	Gnoid	altis	venez	conom	crass	kcras	viola	hirsu	plata	
14-2,38	119.63	39	45	0	3	0	44	3	0	10	4	21	0	19	2	1	14	1	0	0	0	0	0	18	26	
14-2,80	120.05	14	60	1	3	0	61	7	0	2	3	23	0	5	14	2	18	8	0	0	0	0	0	37	18	
14-2,119	120.44	17	47	0	6	1	52	2	0	6	3	13	0	10	14	0	28	1	0	0	0	0	0	35	55	
14-3,20	120.95	21	79	4	0	0	22	3	0	2	1	19	0	11	10	1	14	1	0	0	1	1	0	34	42	
14-3,80	121.55	40	79	0	0	0	36	3	0	0	1	16	0	18	6	3	12	1	0	0	10	5	7	0	36	
14-3,120	121.95	44	69	2	4	2	53	3	0	2	2	16	0	9	2	0	3	1	0	0	23	4	3	0	75	
14-4,20	122.46	45	33	3	23	1	37	1	0	1	0	11	1	9	7	5	7	3	0	0	1	0	0	5	56	
14-4,80	123.05	39	71	5	2	0	38	1	0	8	0	10	1	16	10	27	4	3	0	0	3	0	5	3	53	
14-4,119	123.44	38	49	0	5	1	33	2	0	4	2	13	0	32	8	12	6	6	0	0	0	2	0	4	60	
14-5,38	124.13	35	91	1	1	0	40	1	0	6	1	17	0	11	17	10	9	6	0	0	9	7	5	2	42	
14-5,80	124.55	31	63	0	10	0	30	1	0	8	1	11	1	17	6	40	10	8	0	1	5	2	0	0	44	
14-5,119	124.94	19	60	2	0	0	22	5	0	1	1	18	0	24	20	8	14	9	0	0	1	0	0	8	40	
14-6,20	125.45	23	64	1	0	3	29	2	0	7	2	21	0	22	12	6	10	2	0	0	2	0	0	4	51	
14-6,81	126.06	45	19	3	3	0	66	2	0	11	7	9	1	31	24	24	4	3	0	0	2	0	0	4	46	
14-6,119	126.44	30	18	1	5	0	49	3	0	6	0	12	0	19	9	11	14	2	0	0	0	0	0	2	74	
14-6,139	126.64	36	7	0	0	0	45	1	0	3	5	18	1	32	10	21	7	7	0	0	0	1	0	14	87	
15-1,97	128.32	48	24	0	1	0	33	3	1	8	4	10	0	27	8	4	12	3	0	0	3	0	0	7	60	
15-2,98	129.83	34	19	2	0	1	41	9	0	0	1	16	0	27	19	11	9	3	0	0	2	0	0	16	66	
15-3,98	131.33	68	16	2	0	0	40	5	0	5	3	18	0	19	2	11	10	3	0	1	0	0	0	9	53	
15-4,106	132.83	38	8	2	6	2	30	0	0	6	3	20	1	28	3	5	5	1	0	31	0	0	0	7	43	
15-5,98	134.33	53	5	2	0	1	55	2	0	1	4	11	0	29	1	5	15	0	0	0	0	1	11	0	7	37
15-6,98	135.83	43	8	1	1	2	35	3	0	2	3	12	0	17	4	6	21	3	0	0	1	0	0	7	88	
16-1,98	137.93	48	43	1	5	0	57	2	0	9	1	3	0	10	2	0	3	0	0	0	24	0	0	0	39	
16-2,98	139.43	43	12	7	1	1	33	5	0	5	4	9	0	25	7	7	8	0	0	0	1	2	0	38	24	
16-3,98	140.93	36	4	3	0	1	30	7	0	3	1	6	0	21	9	0	8	0	0	0	2	0	0	0	64	
16-4,98	142.43	22	9	1	0	0	33	4	0	6	2	14	0	20	2	1	6	0	0	0	0	0	0	8	66	
16-5,98	143.93	43	29	5	5	0	57	4	0	7	1	3	0	10	2	1	6	0	0	0	13	3	0	0	44	
17-1,98	147.53	33	45	3	3	0	39	6	0	2	2	6	0	19	2	19	0	0	0	0	2	0	0	4	41	
17-2,97	149.03	16	43	3	1	1	68	0	0	7	2	9	0	13	6	3	8	2	0	0	4	0	0	0	78	
17-3,97	150.52	53	39	3	2	0	45	4	0	2	7	9	0	16	3	12	4	2	0	0	36	0	0	0	39	
17-4,97	152.02	55	45	4	4	0	43	4	0	0	6	5	0	21	1	2	1	1	0	0	14	0	0	0	47	
17-5,97	153.52	48	13	0	7	0	57	5	0	0	5	11	0	29	1	0	3	0	0	0	17	0	0	0	26	
17-6,97	155.02	38	5	1	8	0	28	1	0	4	1	13	0	32	0	18	7	1	0	0	7	0	0	0	59	
18-1,98	157.13	31	27	4	1	1	24	7	0	5	1	11	0	26	2	1	2	1	0	0	8	1	0	0	71	
18-2,98	158.63	25	36	2	0	1	25	7	0	0	0	6	0	25	0	1	3	0	0	0	7	0	0	0	32	
18-3,111	160.26	42	48	1	1	1	22	1	0	2	1	6	0	18	0	0	6	0	0	0	15	0	0	0	53	
18-4,98	161.63	34	48	2	1	0	42	2	0	4	2	11	0	23	0	3	4	1	0	0	43	0	0	0	71	
18-5,98	163.13	17	39	2	2	0	47	2	0	5	0	1	0	15	0	0	0	1	0	0	11	0	0	0	93	
18-6,98	164.63	31	55	1	3	0	27	4	0	1	0	6	0	25	1	14	5	0	0	0	32	0	0	0	35	

SAMPLE	marga	menar	pumil	scitu	tocat	tumid	acost	satca	datca	humer	spach	dpach	dupac	Orbul	Sphae	quinq	Other	TOTAL		
																		PLANK	frags	bform
14-2,38	0	2	0	4	0	0	24	0	0	0	1	5	8	0	9	0	4	307	43	3
14-2,80	3	0	0	2	0	0	10	0	0	0	0	3	8	1	1	0	5	309	43	3
14-2,119	0	1	0	1	0	0	21	0	0	0	0	0	1	4	0	0	2	320	60	2
14-3,20	0	0	0	0	0	0	13	0	0	0	0	4	8	4	8	0	5	308	38	0
14-3,80	0	0	0	6	0	0	27	0	0	0	0	6	15	1	5	1	5	339	42	0
14-3,120	0	0	0	1	0	0	14	0	0	0	0	0	8	0	5	0	3	348	53	1
14-4,20	0	0	0	4	0	0	26	0	0	0	0	1	6	2	9	1	5	303	55	3
14-4,80	0	0	0	3	0	0	8	0	0	0	0	0	0	0	18	0	4	332	40	2
14-4,119	0	0	0	2	0	0	11	0	0	0	0	0	5	3	10	1	5	314	55	2
14-5,38	0	0	0	2	0	1	7	0	0	0	0	2	4	0	6	0	5	338	22	2
14-5,80	1	0	0	5	0	0	8	0	1	0	0	3	8	5	6	0	4	330	45	1
14-5,119	2	0	0	4	0	0	11	0	0	0	1	1	11	3	10	1	5	301	45	2
14-6,20	0	0	0	3	0	0	16	0	0	0	0	1	14	5	8	0	10	318	50	1
14-6,81	0	0	0	2	0	0	13	0	0	0	0	4	14	4	7	1	1	350	95	0
14-6,119	1	0	0	0	0	0	21	0	2	0	0	3	10	4	10	0	8	314	80	3
14-6,139	0	0	0	0	0	0	17	0	0	0	1	2	5	6	7	0	1	334	50	4
15-1,97	5	3	0	4	0	0	17	1	7	0	0	4	10	4	2	0	7	320	45	0
15-2,98	0	0	0	6	0	0	10	0	8	0	0	10	9	0	3	2	5	326	55	2
15-3,98	8	0	0	3	0	0	19	0	2	0	0	6	17	2	2	2	6	332	45	4
15-4,106	17	0	0	1	0	0	20	0	0	0	0	3	14	0	6	0	5	305	95	4
15-5,98	11	1	0	3	0	0	13	0	2	0	1	13	14	2	4	0	5	309	30	3
15-6,98	37	0	0	0	0	0	15	0	0	0	0	7	11	2	1	0	5	335	45	3
16-1,98	23	0	0	2	0	0	9	0	1	0	0	13	17	1	0	0	4	317	50	2
16-2,98	32	0	0	3	0	0	15	0	1	0	0	4	6	1	7	1	3	305	80	1
16-3,98	77	0	0	3	0	0	10	0	0	0	0	6	9	6	1	0	6	313	40	5
16-4,98	56	2	0	3	0	0	15	0	0	0	1	12	12	4	3	0	5	307	40	3
16-5,98	29	0	0	8	0	0	17	0	2	0	0	7	6	2	0	1	5	310	50	6
17-1,98	36	0	0	3	0	0	18	0	8	0	0	8	10	1	1	0	3	314	60	0
17-2,97	39	0	0	3	0	0	7	0	2	0	1	13	20	1	1	0	4	355	30	1
17-3,97	0	0	0	1	0	0	17	0	2	0	0	5	8	2	0	0	6	317	20	2
17-4,97	1	6	0	5	0	0	20	0	1	0	0	11	13	1	0	0	3	314	20	2
17-5,97	46	0	0	0	0	0	23	0	0	0	0	5	11	6	3	1	6	323	25	4
17-6,97	48	6	0	7	0	0	9	0	0	0	0	6	13	1	1	0	5	319	25	0
18-1,98	38	0	0	1	0	0	21	1	1	0	2	13	16	4	3	0	2	326	20	1
18-2,98	38	0	0	2	0	0	19	0	8	0	3	13	33	4	0	0	2	292	30	1
18-3,111	28	0	0	5	0	0	19	0	5	0	2	10	25	3	0	0	5	319	40	2
18-4,98	9	0	0	2	0	0	2	0	0	0	2	5	10	8	0	0	2	331	45	0
18-5,98	15	0	0	5	0	0	9	0	1	0	1	13	18	3	0	0	4	304	35	2
18-6,98	14	1	0	1	0	0	7	0	2	0	0	9	14	3	1	0	6	298	40	2

SAMPLE	Depth	bulls	falco	praed	woodi	decor	gluti	crass	plata	marga	scitu	acost	satca	datca	spach	dpach	dupac	Orbul	quing	Other	PLANK	TOTAL
29-5,60	271.90	1	0	0	0	0	0	0	0	0	0	0	369	0	1	1	0	0	0	0	0	372
29-6,10	272.90	0	0	2	0	0	0	0	0	0	1	0	312	0	4	0	0	0	0	0	0	319
29-6,110	273.90	1	0	2	0	1	0	0	0	0	0	0	287	9	6	0	0	0	1	0	0	307
30-2,50	277.00	0	0	0	0	0	0	0	0	0	0	0	298	10	7	0	0	0	0	0	0	315
30-2,140	277.90	0	0	0	0	0	0	0	0	0	1	0	182	3	1	0	0	0	0	0	0	187
33-3,59	307.69	5	1	0	0	0	0	0	5	0	2	0	225	0	0	0	0	0	0	0	0	238
33-4,11	308.71	1	0	0	1	0	0	0	0	0	0	0	11	2	1	0	0	0	0	0	0	16
33-4,130	309.90	4	0	1	0	0	0	0	2	0	0	0	40	2	1	0	0	0	1	0	0	51
33-5,100	311.10	6	0	0	0	0	0	0	2	0	2	0	279	6	0	1	0	0	2	1	0	299
33-cc,30	311.90	0	0	0	0	0	0	0	0	6	1	0	299	9	1	4	0	0	3	2	0	325
36-2,11	334.71	0	0	4	0	0	0	0	0	0	0	0	326	6	4	0	0	0	0	0	0	340
36-2,109	335.69	0	0	0	0	0	0	0	0	0	1	0	318	5	2	0	0	0	0	0	0	326
36-3,59	336.69	5	1	0	0	0	0	0	0	0	0	0	375	4	12	0	0	0	0	0	0	397
36-4,11	337.71	10	2	0	0	0	0	0	43	0	7	0	306	3	3	0	0	2	4	0	0	380
36-4,110	338.70	29	0	0	1	0	0	0	17	0	2	0	239	16	0	0	0	2	10	0	0	316
36-5,59	339.69	32	1	0	0	0	2	0	23	0	3	0	292	10	0	0	0	3	5	3	0	374
36-6,110	341.70	0	1	0	0	0	0	0	8	0	3	0	393	7	2	2	0	4	2	0	0	422
36-7,30	342.40	1	0	1	0	0	1	0	0	0	0	0	441	6	0	1	0	0	0	0	0	451
37-1,39	343.19	0	0	0	0	0	0	0	0	0	0	0	859	4	1	0	0	0	0	0	0	864
37-1,141	344.21	48	1	0	1	0	2	0	9	0	1	0	187	8	1	0	0	0	0	3	0	261
37-2,92	345.22	77	5	0	1	0	2	0	1	0	0	0	321	3	2	1	0	0	0	1	0	414
37-3,40	346.20	2	0	0	0	0	0	0	3	0	0	0	337	6	2	0	0	0	0	1	0	351
37-3,142	347.22	0	0	0	0	0	0	0	0	0	0	0	360	10	0	0	0	0	0	0	0	370
37-4,90	348.20	0	0	0	0	0	0	0	0	0	0	0	172	6	0	0	0	0	0	0	0	178
37-5,41	349.21	7	0	0	0	0	0	0	0	0	26	0	372	4	10	0	0	0	0	0	0	419
37-5,130	350.10	5	0	0	0	0	0	0	1	0	8	0	182	5	2	0	0	2	0	1	0	206
37-6,95	351.25	3	0	0	0	0	0	0	2	0	19	0	386	4	0	0	0	0	0	0	0	414
38-1,40	352.80	13	0	0	0	0	0	0	4	0	3	0	317	5	6	0	0	0	0	0	0	348
38-1,141	353.81	9	0	0	0	0	1	0	8	0	4	0	394	5	3	0	0	0	0	1	0	425
38-3,40	355.80	14	1	0	2	0	1	0	31	1	2	0	221	4	0	1	0	0	0	2	0	280
38-3,141	356.81	24	0	0	0	0	0	0	31	0	3	0	246	6	0	5	4	0	0	0	0	319
38-5,141	359.81	0	0	0	0	0	0	0	0	0	7	0	335	3	1	0	0	0	0	0	0	346
38-6,90	360.80	3	1	0	0	0	0	0	1	0	7	0	322	7	3	0	0	0	0	3	0	347
38-7,20	361.60	2	0	0	0	0	0	0	0	0	4	0	96	1	0	0	0	0	0	0	0	103
39-1,23	362.23	5	0	0	0	0	0	0	2	0	1	0	320	5	1	0	0	0	0	2	0	336
39-1,120	363.20	26	0	0	0	0	0	0	6	0	7	0	338	3	11	1	0	0	0	0	0	392
39-2,70	364.20	34	0	0	0	0	0	0	20	2	3	1	277	13	2	1	0	0	0	2	0	355
39-3,20	365.20	7	0	0	0	0	0	0	4	0	12	0	266	7	37	0	0	0	0	2	0	335
39-3,120	366.20	3	0	0	0	0	0	0	3	0	6	0	326	4	7	0	1	0	0	1	0	351
39-4,80	367.30	5	0	2	0	0	1	0	3	0	11	0	318	6	6	0	0	0	0	1	0	353
39-5,20	368.20	41	0	0	0	0	4	0	6	0	8	0	346	3	6	0	0	0	0	1	0	415

TOTAL

SAMPLE      Depth   bulls   falco   praed   woodi   decor   gluti   crass   plata   marga   scitu   acost   satca   datca   spach   dpach   dupac   orbul   quinq   Other   PLANK

39-5,101	369.01	2	0	0	0	0	0	0	0	0	0	8	0	360	0	4	0	0	0	0	0	4	378
39-6,50	370.00	2	0	0	0	0	0	1	0	3	0	403	1	5	0	0	0	0	0	0	0	6	421
39-7,11	371.11	6	0	0	0	0	0	0	0	12	0	265	4	7	0	0	0	0	0	0	0	0	294
40-1,39	372.09	24	1	0	0	0	0	15	0	26	0	279	5	2	1	0	0	0	0	0	0	0	353
40-1,141	373.11	10	0	0	0	0	0	6	0	24	0	320	9	3	0	0	0	0	0	0	0	1	373
40-2,90	374.10	4	0	0	0	0	0	2	0	10	0	126	3	1	0	0	0	0	0	0	0	1	147
40-3,39	375.09	23	0	0	0	0	0	11	0	20	0	210	7	1	1	0	0	0	0	0	0	1	274
40-3,139	376.09	0	0	0	0	0	0	3	0	8	0	326	5	6	0	0	1	0	0	0	0	0	349
40-4,89	377.09	0	0	0	0	0	0	6	0	5	0	326	7	5	0	0	0	0	0	0	0	0	349
40-5,40	378.10	3	0	0	0	0	0	7	0	9	0	357	2	3	0	0	0	0	0	0	0	2	383
40-5,130	379.00	0	0	0	0	0	4	0	0	2	0	342	1	9	0	0	0	0	0	0	0	0	359
40-6,90	380.10	3	0	0	0	0	0	43	0	1	0	322	5	9	0	1	0	0	0	0	0	0	386
40-7,40	381.10	15	0	0	0	0	0	1	0	6	0	390	1	13	0	1	0	0	0	0	0	0	427
41-2,39	383.19	56	2	0	0	0	0	16	0	7	0	267	3	12	0	0	0	0	0	1	0	0	365
41-2,139	384.19	10	0	0	0	0	0	0	0	3	0	363	3	5	0	0	0	0	0	0	0	0	384
41-3,91	385.21	18	0	0	1	0	0	0	0	8	0	326	22	0	0	0	0	0	0	1	0	0	376
41-4,40	386.20	0	0	0	0	0	0	0	0	0	0	328	4	48	3	0	0	0	0	0	0	1	384
41-4,142	387.22	1	0	0	0	0	0	0	0	1	0	97	1	29	0	0	0	0	0	0	0	2	131
41-5,91	388.21	4	0	0	0	0	0	0	0	2	0	349	4	19	1	0	0	0	0	0	0	0	379
41-6,40	389.20	3	0	0	0	0	0	1	0	1	0	355	5	9	0	1	0	0	2	1	0	1	378
41-6,100	389.80	0	1	0	1	0	0	0	0	0	0	314	1	17	1	0	0	0	0	0	0	0	335
42-1,40	391.40	15	0	0	0	0	0	0	1	5	0	406	0	20	0	0	0	0	0	0	0	0	448
42-1,140	392.40	15	0	0	0	0	0	0	0	1	0	293	2	10	0	0	1	0	0	0	2	324	
42-2,90	393.40	11	0	0	0	0	0	0	0	3	0	90	7	2	0	0	0	0	0	0	2	115	
42-3,37	394.37	18	0	0	0	0	0	0	0	3	0	288	9	9	1	2	0	0	0	0	1	331	
42-4,91	396.41	15	0	0	0	0	0	0	0	2	0	324	6	4	2	0	0	0	1	0	0	354	
42-5,39	397.39	30	0	0	0	0	2	0	0	2	0	265	6	8	1	1	0	0	0	0	0	315	
42-5,109	398.09	15	0	0	0	0	0	0	0	0	0	269	0	4	0	0	0	0	0	0	0	288	
42-6,41	398.91	6	0	0	0	0	0	0	0	0	0	326	2	2	0	0	0	0	1	1	1	338	
42-6,141	399.91	12	0	0	0	0	0	0	0	0	0	299	4	6	1	0	0	0	0	0	1	323	
42-7,40	400.40	3	0	0	0	0	0	0	0	0	0	366	1	1	0	0	0	0	0	0	0	371	