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The Rough Cilicia Survey Project (RCSP) has been collecting data on the southern Mediterranean coast of Turkey (known as Rough Cilicia) since 1996. This paper is a preliminary analysis of how the architectural and ceramic data collected by the survey team may be utilized. It is theorized here that the frequency of certain ceramic types may be linked to amount of architecture. However, this paper is not meant to be conclusive, but is rather a starting point for future studies of this data.

The Rough Cilicia Archaeological Survey Project (RCSP), ongoing since 1996, is mainly concerned with learning how the Cilicians interacted with the Roman Empire (Rauh and Wandsnider 1999). Rough Cilicia is located on the southern Mediterranean coast of Turkey (Figure 1). To understand this interaction between Roman and Cilician, there should first be some sort of understanding of land use and settlement patterns. The RCSP working to understand the land use by collecting data about architectural elements and ceramic distributions on the surface. Surface surveys of this sort are being conducted in the Near East (Wilkinson 1982), Greece (Alcock, et. al 1994; Osborne 1987), and in North America (Wandsnider and Camilli 1992). This paper will hopefully further understanding of one part of the occupational history – how, if possible, ceramics can be correlated with architectural features. Are certain types of ceramics related to architectural features? For example, will cooking wares be present in areas with architecture which indicates residence of people, but not in areas without architecture because there is no indication of people living there? Or are fineware vessels associated with larger settlements such as towns or agricultural estates where wealthier people would have lived, or are they associated with smaller settlements such as small farmsteads with little architecture?

Methods

Due to time constraints, the only data out of the six survey seasons that I had time to process for analysis was the 1999 data, leaving a small sample size to work with. Due to this reason and because this is a preliminary look at ceramics and architecture, the analysis is primarily based on visual charts, rather than formal statistical methods. The number of variables that may have an impact on determining the function – type of architecture, time period architecture or ceramics were used, presence of other features, and the relationship between the various types of ceramics – also make statistical analysis only potentially useful.

Rough Cilicia Data

During the 1999 field season, the Rough Cilicia Archaeological Survey Project surveyed certain areas (Figure 2) using a pedestrian survey team of five to seven walkers (Rauh and Wandsnider 1999). Each team member was approximately 25 meters apart and was responsible for looking at a one and a half-meter swath of the survey unit. In areas that contained architectural remains or had a ceramics cluster of more than one sherd per square meter, a collection was taken of diagnostic pieces and the area recorded using a Global Positioning System (GPS). The types of features in the collection area – architecture, terracing, fortification, or tombs – were also recorded.

These collection areas were further divided into groups of sherds by chronotype, so that each group was of the same chronotype. The chronotype groups are the basic unit of observation but the collection areas had to be the basic unit of analysis for the 1999 data since only the collection areas have GPS coordinates. The ceramics were analyzed in the field to speed

up the process and to alleviate the need to carry sherds back to the home base. This meant that the artifacts could not be cleaned prior to identification, nor could the sherds be compared with previously identified sherds, so the identification of the chronotype of the ceramics is tentative in some cases (Rauh and Wandsnider 1999). There is also probably a bias in the data towards fine wares, since they are 'pretty' pieces, and amphoras, because the unusual shape of the handle and toe are easily more distinguisable against the ground (about sampling bias due to unusual shapes and colors see Wandsnider and Camilli 1992). Due to these factors, finewares and amphoras were probably more readily looked at than other sherd types, such as cooking or coarse wares.

The southern portion of the 1999 survey area was part of previously surveyed land near to the coast where dispersed agricultural residences and a continuous distribution of ceramics were observed. The northern part of the survey in the Kahyalar area, perhaps indicates a more industrial setting. This interpretation is based on the close proximity of the sites and the lack of press stones or storage silos in all but one site. Also the ceramics were concentrated in specific locations and not spread as a continuous distribution across the landscape (Rauh and Wandsnider 1999). There may be a difference in data due to the differences of these areas, but that is a matter outside of the scope of this paper.

There were 28 Collection Areas that had locational coordinates associated with them, but only 23 also had ceramic and feature data. The features recorded were architecture (general); fortifications; terraces; and tombs. Architecture included anything from simple square structures to extensive structural remains (Rauh and Wandsnider 1999).

Three collection areas did not have any feature information, so they were classified as having no associated architecture. Five other collection areas only had information about architecture. Although the data on architecture was missing for three areas, it was utilized because it is the most complete feature information and because architecture was found in the most collection areas (Table 1).

The collection areas were categorized according to the total amount of architecture found in each locale in order to assess if the amount of architecture is responsible for the presence and absence of certain ceramics (Table 2). Eleven areas that did not contain architecture; had only recent architecture; or did not have information about architecture, were classified as 'No Architecture'. A classification of 'Limited Architecture' was given to six collection areas that had one to two architectural structures or worked blocks present. Three to twelve architectural elements were found in two areas which were classified as 'Intermediate Architecture'. Four areas with over twelve architectural features were classified as 'Extensive Architecture'.

The ceramic data was reclassified for standardization, due to the variety in ways that sherds were identified and documented. First, using the brief descriptions of chronotype, the sherds were reclassified into six categories. These categories and examples of the type of chronotypes that went into them are shown in Table 3. Next, all of the type of chronotypes that went into them are shown in Table 3. Next, all of the groups in a collection area were aggregated by summing the number of sherds of each chronotype, in order to make the data more manageable to work with.

Results

As stated above, the collection areas were grouped according to amount of architecture contained in each (Table 4). Since there was not enough time to look at every type of ceramic, three types of ceramics were examined: cooking wares, transport vessels, and fine wares. Before beginning the analysis to examine the relationship between architecture and ceramic types, a few 'common-sense' premises were constructed. These premises could be better formulated if there were excavated areas in the survey to correlate the ceramic data with. But since that type of data is not available, common-sense was used instead.

Areas either without architecture or with recent architecture were expected to be mostly absent of ceramics. If there are ceramics in these areas, most should be transport vessels instead of fine or cooking wares since the latter two types would be more likely to be present

where people resided. In areas with limited architecture (1-2 structures), all three types of ceramics would be expected, but the proportion of fine wares would be low compared to other types. All three types of ceramics would also be expected to be present in areas of both in areas of both intermediate (3-12 structures) and extensive (more than 12 structures) architecture since these areas also probably indicate residence. However, it is expected that the percentage of fine wares would be higher in intermediate areas than in limited areas, and highest of all in extensive architecture areas because more wealthy people might have lived in areas with greater amounts of architecture. These premises were then tested by analyzing a pie chart showing the percentages of ceramic types for each architecture area type (Figures 3-6).

Analysis of this data requires a few assumptions about the collection procedures to be made. First, it assumed that all the architectural remnants in the collection area were found and duly noted. Another assumption is that all the sherds were found and recorded equally, but this is not the case since there is a bias towards fine wares and transport vessels. Also, there is the assumption, as with many survey projects, that the sherds found are representative of the actual population. Finally, it is also assumed that all the sherds were classified accurately, but the fact that this identification was tentative in some cases has been previously discussed.

Cooking vessels are by far the most common ceramic type, as summarized in Table 5. They are found in 63.6% of the areas without architecture, 66.6% of the areas of limited architecture, in 100% of the intermediate architecture areas, and also in 100% of the extensive architecture areas. The overall percentage of areas with cooking vessels is 73.9%. Fine vessels (Table 6) were found in 54.5% of the areas without architecture, in 83.3% of the limited architecture areas, in 100% of both areas containing intermediate and extensive amounts of architecture. The percentages of areas with transport vessels (Table 7) are 81.8% of the non-architecture collection areas, 83.3% of the limited architecture areas, and yet again 100% in intermediate and extensive architecture amount areas.

Comparing cooking vessels, fine wares, and transport vessels by architecture type (Figure 7), shows that there are some interesting trends in the data. The most fine wares are found in the areas with extensive architecture, but are also present in all of the other types of areas. The other interesting thing to note in Figure 7, is that transport vessels are overwhelmingly found in the areas without architecture, which is contrary to the expectations. So clearly some factor or factors other than architecture must be considered to fully assess spatial patterning.

Discussion

From the analysis it becomes clear that none of the premises were correct. First of all there are ceramics in areas without architecture. If the hypotheses were correct in assuming that non-architecture areas were without activity,then there should have been no ceramics in those collection areas. There are a few reasons why the hypotheses proved incorrect in regard to the areas without architecture.

One reason is that the data may have been faulty, some architecture was not recorded for an area. Some of the areas classified under no architecture in fact are just without data, and so may actually have architecture, which would change data patterning. There may also have been errors in the reclassification of the chronotype. Using only the description of chronotype, and those identifications in the field being tentative in some cases, makes it likely that some groups of sherds were incorrectly placed into types of sherds.

Perhaps the premises were mostly true, except the one that stated that there would not be ceramics in non-architecture areas. However, it may be that the differences can not be detected by just examining the presence of a type of ceramic versus its absence. Instead it may be that proportions of vessels should be more closely examined. But this can not be tested since the number of vessels can not be determined from the data, because the sherds in a group may all be from the same vessel or from twenty different vessels. Also, the addition of

the data from the other field seasons would improve the analysis because then there would be a larger sample size.

Differences in the data due to unseen factors can not be ruled out from having affected the data. One such factor that could not be seen may be the existence in the history of structures, perhaps temporary, that people lived in and would thus account for the appearance of fine and cooking vessels where they were not expected. A reason that may account for the abundance of vessels, especially transport vessels in collection areas without architecture, may be due to manuring. In the manuring hypothesis, sherds are introduced into agricultural land because after being broken they were thrown into heaps of manure and then spread with it on farm land as fertilizer (Alcock, et al. 1994). Sherds may be introduced into rural land in other ways, such as providing protection for newly planted vines, but in some cases it does seem that manuring distributes ceramics across the landscape.

Conclusion

So, can ceramics be correlated to architecture in the Rough Cilicia Survey Area? Yes, and no. This preliminary study can only say that there are patterns of ceramics types in relation to architecture, but more study needs to be done. Other factors need to be taken into consideration, such as archaeological invisible deposits like the possibility of temporary shelters in antiquity or the use of manuring. Of course the other features, such as tombs, should also be analyzed to see if they affect the appearance of ceramic types. Addition of the size of the area where each collection took place would also be helpful, because density of ceramic sherds per square meter (m^2) could be calculated. These are all future directions that this study could take.

The data from other survey years, if they can be standardized with the 1999 data, should also be used to yield a larger sample. Also, the data should be separated by time period since a town may have existed in Late Roman times, but not earlier, and so understanding of the land use could become more concise. Comparing the different types of features and ceramics to other sites would be beneficial because then it could be determined if the data was ordinary in respect to the type of site or not. Overall, the data requires more time to be spent in analysis and in aggregating the other years of data together. Hopefully, however, this is a starting point for future analyses.

Acknowledgements. Thank you to the Rough Cilicia Survey Team for allowing me to analyze their data from the 1999 season, and especially to Dr. LuAnn Wandsnider who has taught me so much about archaeology.

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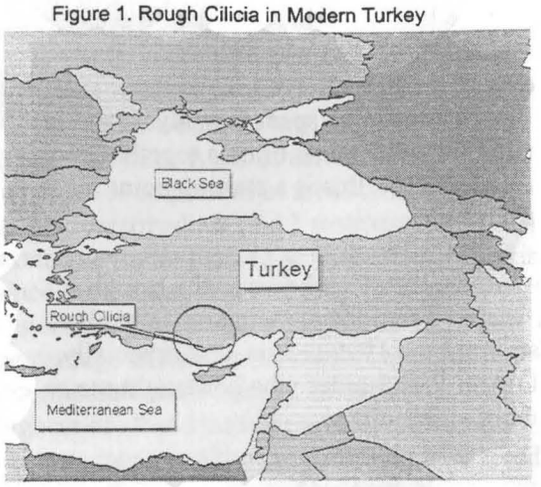
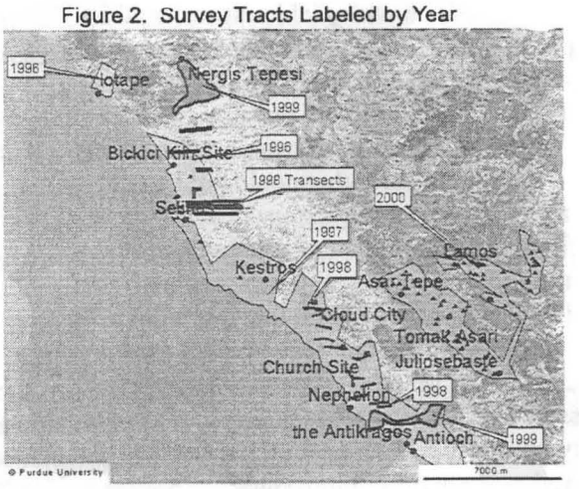
Figure 1. Rough Cilicia in Modern Turkey



http://ABE.www.ecn.purdue.edu/~raunn/

Figure 2. Survey Tracts Labeled by Year



From PowerPoint Presentation by L. Wandsnider

Figure 3. Absent or Recent Architecture

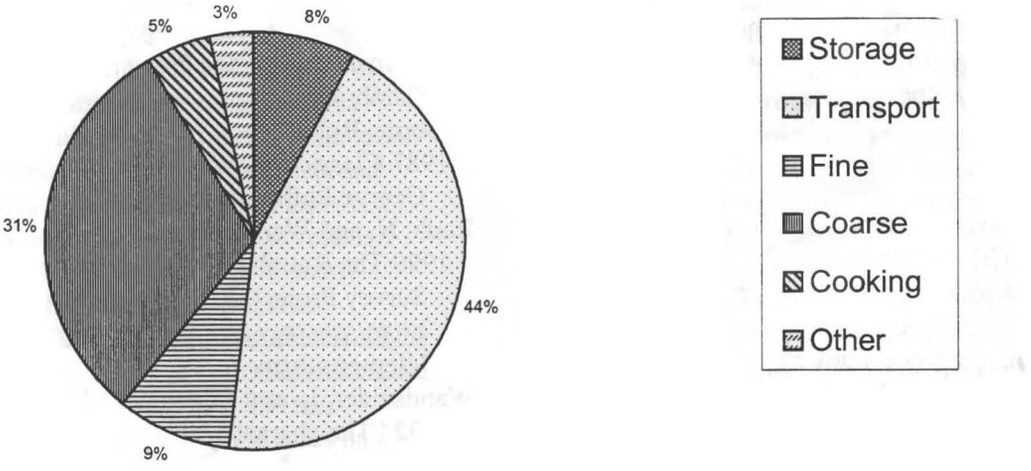


Figure 4. Limited Architecture

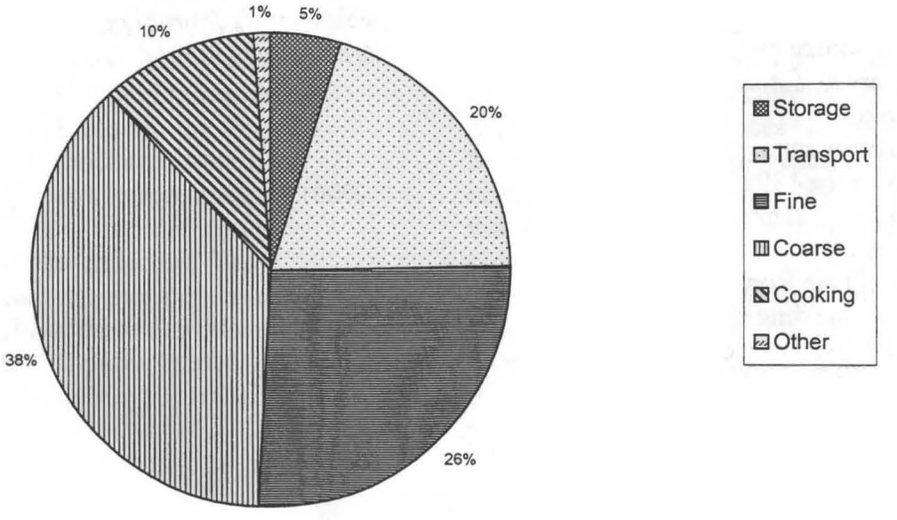


Figure 5. Intermediate Architecture

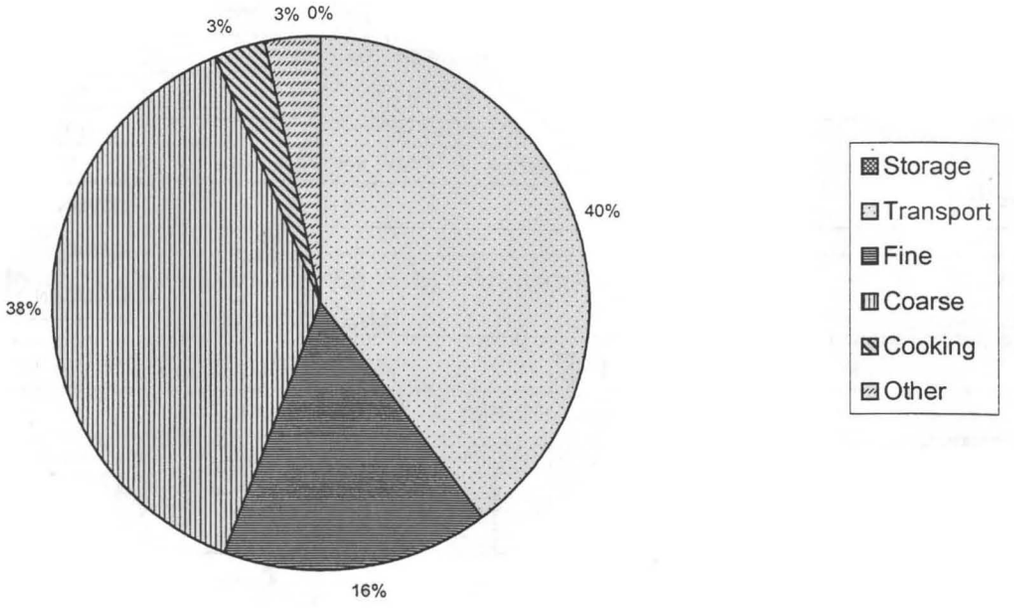


Figure 6. Extensive Architecture

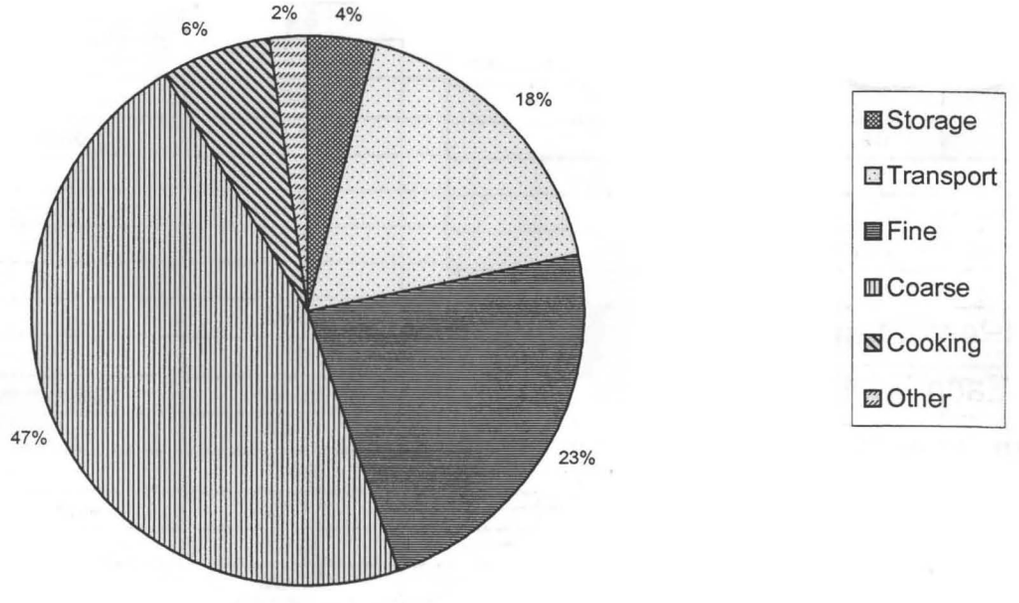


Figure 7. Comparison of Transport, Fine, and Cooking Vessels by Architecture Type

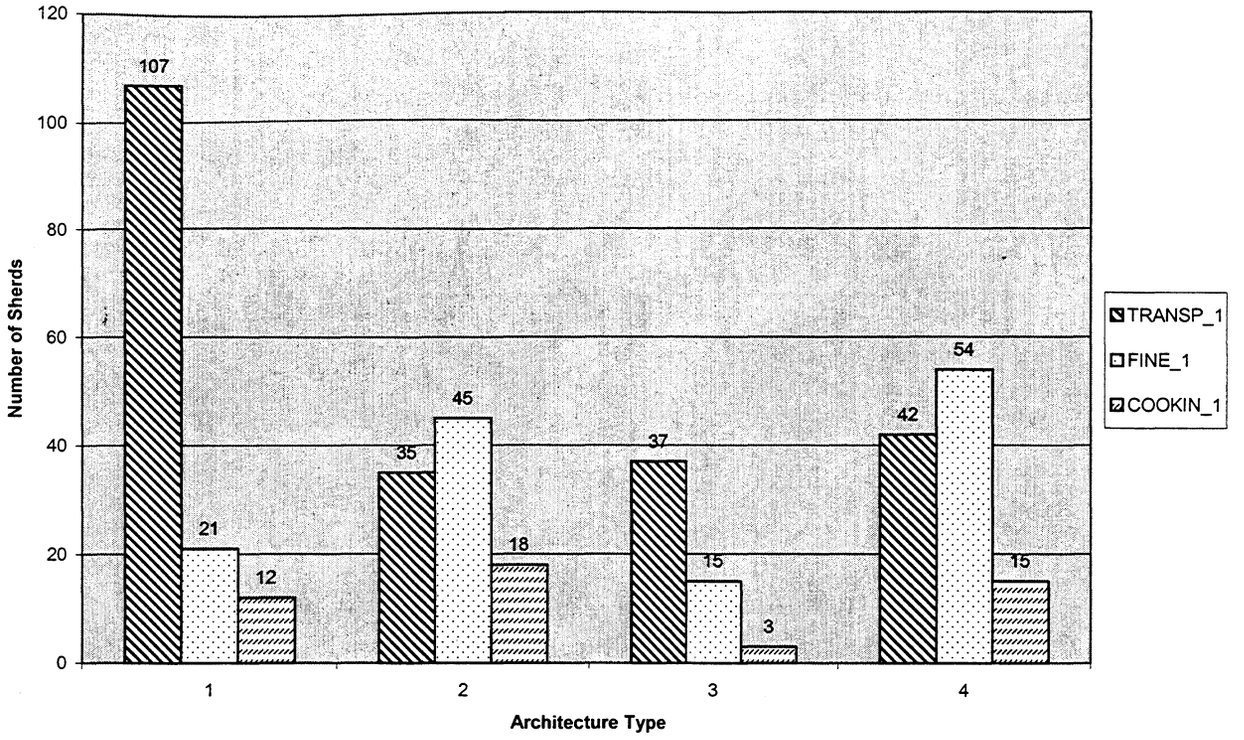


Table 1. Number of Collection Areas Features Were Found In	
Feature Types	**# of Collection Areas**
Fortification	0
Press Stone	1
Architecture	12
Tombs or Possible Tombs	6
Terracing or Possible Terracing	2

Table 2. Percentage of Collection Areas in Each Feature Type Class	
Feature Types	**% of Collection Areas**
No Architecture	47.8% (11)
Limited Architecture 1-2	26.1% (6)
Intermediate Architecture 3-12	8.7% (2)
Extensive Architecture 12<	17.4% (4)

Table 3. Correlation Between Chronotype and Ceramic Category	
Ceramic Types	**Chronotypes**
Storage	pithoi, storage vessels, basins
Transport	amphoras
Fine	glazed, sigillata, thin-walled
Coarse	coarseware, plainware
Cooking	cooking, stewpots
Other	loomweights, rooftiles, water pipes

Table 4. Collection Areas with Associated Ceramic Data, Divided by Architecture Type

		Ceramic Type					
Architecture Type	**Collection Area**	**Storage**	**Transport**	**Fine**	**Coarse**	**Cooking**	**Other**
Absent or Recent	99-10	6	18	0	1	4	1
	99-12	7	2	0	7	0	1
	99-15	5	0	0	13	0	0
	99-16	0	0	0	11	2	0
	99-19	0	22	11	1	0	2
	99-21	0	5	4	6	1	2
	99-24	0	3	1	20	1	0
	99-28	1	3	1	3	1	1
	99-30	0	5	2	4	1	0
	99-6	0	5	2	8	0	0
	99-9	0	44	0	1	2	1
	Total	**19**	**107**	**21**	**75**	**12**	**8**
Limited	99-11	2	1	0	10	0	0
	99-14	3	24	5	26	13	2
	99-18	0	3	28	4	1	0
	99-25	0	0	4	15	3	0
	99-3	1	4	7	7	1	0
	99-8	2	3	1	3	0	0
	Total	**8**	**35**	**45**	**65**	**18**	**2**
Intermediate	99-22	0	14	11	15	2	2
	99-7	0	23	4	20	1	1
	Total	**0**	**37**	**15**	**35**	**3**	**3**
Extensive	99-17	4	22	28	37	2	1
	99-2	3	12	7	24	7	2
	99-27	1	1	6	28	1	1
	99-29	1	7	13	21	5	1
	Total	**9**	**42**	**54**	**110**	**15**	**5**