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THE WAIKATO SITE FILE: A STOCKTAKING

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The NZ Archaeological Association Site Recording Scheme (SRS) has now existed for 37 years and contains records for nearly 50,000 sites. Despite several reviews of its effectiveness there has been little effort to find how much information is in the file, or its accuracy and currency. Little is known about how information was collected or who collected it. This paper tries to answer these questions for the Waikato files, in the hope that such a case study will be of value in any discussion about future directions for the SRS. Challis (1996) has done something similar for the Canterbury site file. Unless otherwise stated all statistics that follow describe the Waikato file as it was in mid 1995.

The Waikato site recording district covers 13 of the 153 North Island 1:50,000 topographic sheets (Fig. 1). Five sheets are on the west coast, another extends into the Bay of Plenty: the remaining seven are inland. Sheets R13-17 cover the coastal ranges and tidal harbours. Sheets S13-17 cover the Waikato-Waipā lowlands and the upper Mokau and Wanganui watersheds. Sheets T14-16 cover the upper Hauraki plains and upper Waikato.

HISTORY OF WAIKATO SITE RECORDING

Within months of the SRS being established, in 1960, records began entering the Waikato file. For the first decade most recording was done by a group of local amateurs. They concentrated on sites within easy travelling distance of Hamilton. After 1983 the group, by then called the Waikato Museum Archaeological Society, became much less active, but amateur site recording by groups and individuals has continued at a relatively constant rate up to the present.

Between 1973 and 1978 Auckland academics did a considerable amount of recording, mostly in the coastal areas. Recording near Raglan and Aotea harbours was undertaken to answer research questions. Recording on the Tahuna sand dunes was undertaken (for the Historic Places Trust) prior to site destruction by ironsand mining.

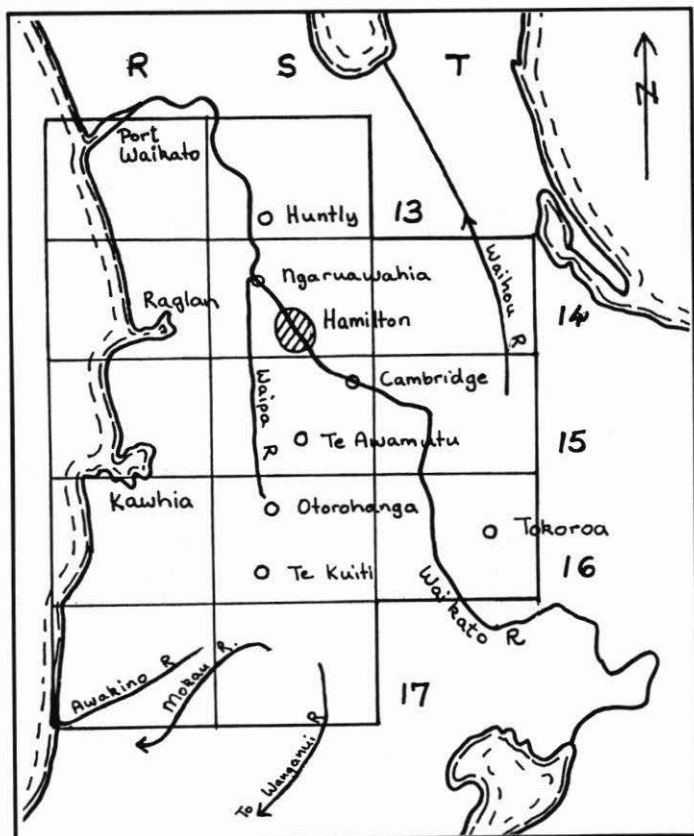


Figure 1. Location map showing the 13 topographic sheets which make up the Waikato site recording district.

Site recording took a giant leap forward in 1977 when the recently-established Waikato Museum recorded about 650 sites on aerial photographs. (Edson 1980) The photographs had been flown prior to 1945, so there was considerable uncertainty as to how many still existed or how well they were preserved. A year later 350 of these and other sites were photographed from a light aircraft. Despite good intentions there was only limited ground-based follow-up.

The Museum more or less pulled out of site recording in about 1981. In the same year the Historic Places Trust began sponsoring systematic recording in several important and/or threatened areas, but its involvement tapered off over the next few years. In 1994 the Trust provided limited funding for a mostly privately-financed amateur recording project on the King Country coastline south of Kawhia (Wilkes 1995). Experience gained on that project has been used in this stocktaking to evaluate the rest of the Waikato file.

The NZ Forest Service became involved from 1977, mainly recording areas about to be planted in pines. Recording by Forest Service, Lands & Survey, and later by the Department of Conservation (DoC) has continued at low levels to the present.

In recent years there have been a few records and updates contributed by commercial (consultant) archaeologists.

The Waikato file was housed in Waikato Museum as soon as the Museum was established in 1966 and stayed there until 1988 when it was shifted to the Hamilton office of DoC. For the first 15 years the filekeepers were all amateurs. Museum staff then maintained the file for ten years. In 1985 filekeeping became an amateur operation again, and has remained so since.

NUMBER AND NATURE OF RECORDS

As of March 1995 the 'official' size of the Waikato file - the figure published by the central filekeeper - was 2789 records. The number of records in the Waikato file was somewhat greater because of records still in the local-to-central pipeline. Although the Waikato filing district occupies 12% of the North Island it has only 7.4% of North Island records. Given that the inland Waikato-Waipā-Mokāu basin was fairly densely settled by Māori, this immediately suggests that the Waikato is relatively under-recorded.

Figure 2 shows Waikato site records as a percentage of total New Zealand records. For the first two decades the Waikato averaged 4%; it shot up to 9% as a result of the air photo project; it has since been in decline, picking up only in the last couple of years. Without an active local Museum or university department the Waikato has missed out on its fair share of recording effort.

For this stocktaking records have been classified into 4 types, present in the following percentages:

Unfortified Maori sites.	56%
Fortified Maori sites	37%
Pakeha/historic era sites	3%
Trivial records	2%
Unused numbers, missing records etc	2%

The fortified/unfortified ratio - pa make up 40% of the Maori sites - is another indicator of Waikato being under-recorded. Pa are more obvious in the landscape than other site types and hence are preferentially recorded.

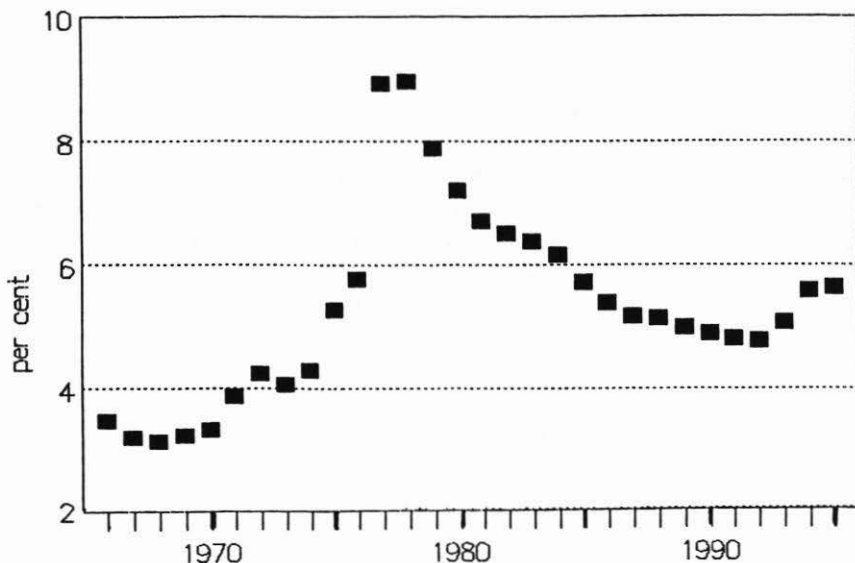


Figure 2. Waikato site tallies as a percentage of total NZ tallies in the NZAA central file, 1966-1995.

When an area is intensively surveyed, as was done on the King Country coastline, the proportion of pa drops to 15%. Assuming most pa are already discovered a simple proportion calculation predicts there are 7250 recordable sites in the Waikato.

The Pakeha or 'historic' records include a number of coalmining sites around Huntly and a sprinkling of waterwheel pits, flaxmills, mission stations and the like.

Records classed as 'trivial' are mostly artifact find-spots. While obviously important, find-spots clutter the system, especially downstream when site records are used for district planning. A separate artifact recording system is needed. Other trivial records include locations where particular events such as battles are said to have occurred, but for which there is no known field evidence.

The remainder of this stocktaking deals only with the Maori sites, of which there are 2774.

WHO RECORDED WHAT WHEN

Figure 3 is derived from the "Reported by ..." box of the site record forms, and may not be particularly accurate, since the affiliations of some of the recorders can only be guessed at. It shows that amateurs have been making a consistent contribution over the entire history of the file, mostly in an unsystematic and ad hoc way. While the proportion of sites recorded by amateurs has dropped over the years, the actual rate of amateur recording has remained fairly constant - which seems to undermine the claim sometimes made that it was the 1975 Historic Places Amendment Act that killed off amateur archaeology in the Waikato. The contributions of the professionals have been more systematic and project-oriented, but also more limited in duration and extent.

The contribution of these types of fieldworkers to both original records and updates/re-visits is summarized in Figure 4. Despite being active for only four years the Waikato Museum still has the biggest tally, followed closely by amateurs and the Trust. (Note, however, that if the 1994 King Country coastal survey is regarded as an amateur effort then amateurs come out on

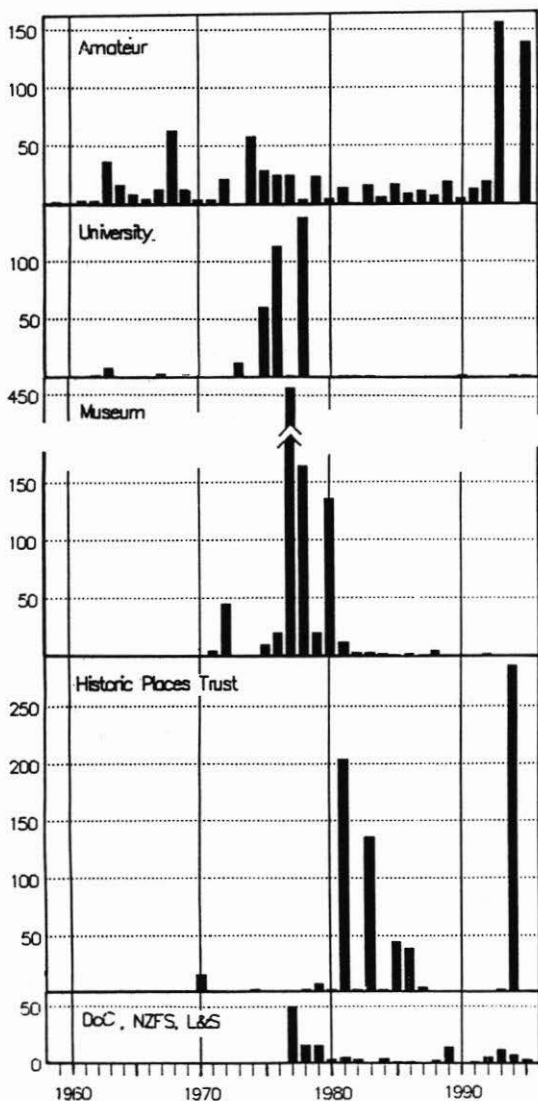


Figure 3. Annual contributions of various categories of site recorder to the current Waikato file.

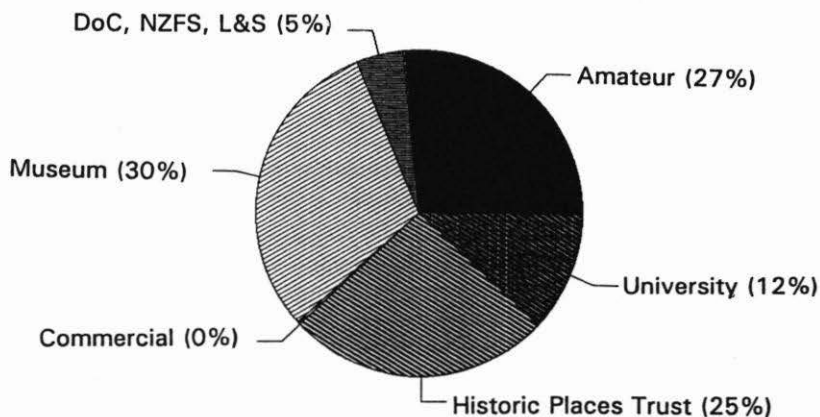


Figure 4. Total of records and updates/revisits contributed of various categories of recorder of the Waikato file.

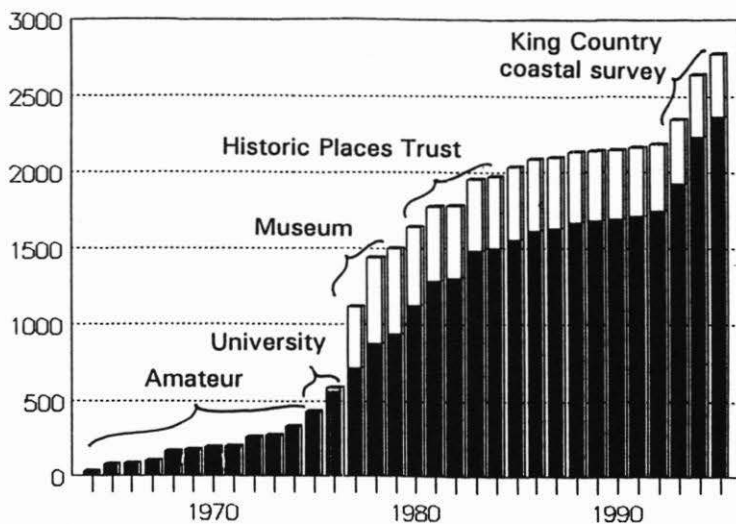


Figure 5. Tally of records in the Waikato file by year. White portion of each column indicates site known only from aerial photos.

top with 37%, and the Trust contribution drops to 16%) Missing from the pie is a slice of less than one percent, the contribution of the consultant archaeologists. The Historic Places and Resource Management Acts may be generating employment for archaeologists but they are not generating much information for the Waikato file.

The overall buildup of site numbers is shown in Figure 5. Here the solid bars represent sites known from field observation, while the open bars represent sites known only from air photography. It shows the slow buildup in the amateurs-only decade, the modest acceleration when the academics became involved, the strong spurt from the Museum's aerial survey, the relative stagnation that followed, and a recent spurt resulting from the King Country coastal survey.

QUALITY OF RECORDS

An attempt to quantify the quality of the file records indicates that:

- 16% (A) indicate little more than the existence of a site at a particular locality (most are based on 1940s air photos),
- 78% (B) have some information about the site, but not enough for most research, planning or protection purposes,
- 5% (C) have comprehensive descriptions and/or measured plans such that data is sufficient for most purposes,
- 1% (D) have documentation in as much detail as is ever likely to be needed (stratigraphy recorded, middens quantified, pits measured, etc).

As expected 'B' sites make up the majority of the file. Only 6% of records (C & D) can be described as adequate.

The following table shows who the various quality records and updates originated from and what proportion of the various quality records they contributed.

	A	B	C	D
Amateur	3	40	66	40
University	4	14	13	24
Waikato Museum	89	23	19	12
Historic Places Trust	4	16	1	0
NZFS, L&S, DoC etc	<1	6	2	24
Consultant	<1	1	0	0

If we ignore the likelihood of bias in its compiler (an amateur), this table appears to show that amateurs have contributed most to the higher quality (C & D) records. In large part this reflects the operational style of the earlier amateurs, a car-full of whom would often spend an entire Sunday clearing, mapping and test-pitting a single site. Forest Service recording was of very high quality. The Waikato Museum air photo project was responsible for the bulk of the "A" quality records.

AGE OF RECORDS

Unless there is a vigorous program of fieldwork any site file will become more out of date with every year that passes. Figure 6 shows that in the Waikato the situation is more complicated. The inclusion in 1977-78 of records based on pre-1945 air photography introduced a body of data which was over 30 years old 'at birth'. The re-photographing of some 200 of these sites a year later produced a significant drop in average age. Apart from that, and a recent drop due to the King Country coastal survey the file has been ageing at a fairly steady rate. In 1995 the average age of the records was 19 years.

Figure 7 shows the 1995 age distribution. There is a satisfyingly high proportion of young records on the right and a disturbingly steep heap of geriatric records on the left. It is hard to decide however, whether field time should be spent rejuvenating geriatric records when there are still lots of sites which aren't recorded at all.

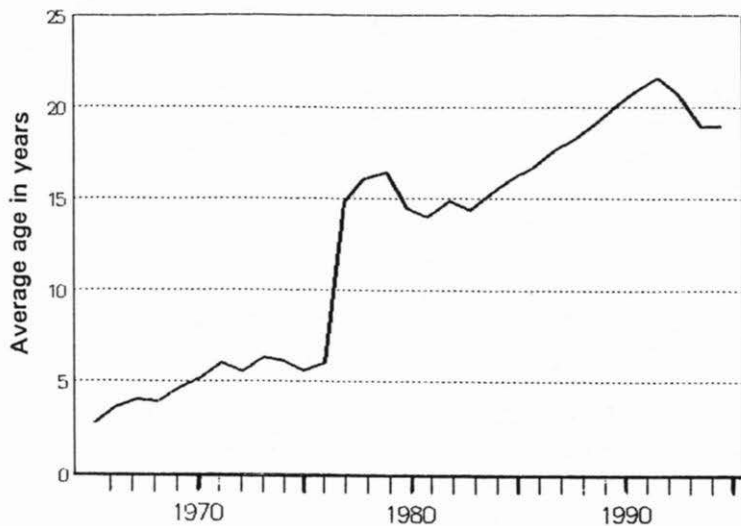


Figure 6. Historical series showing average age of records in each year.

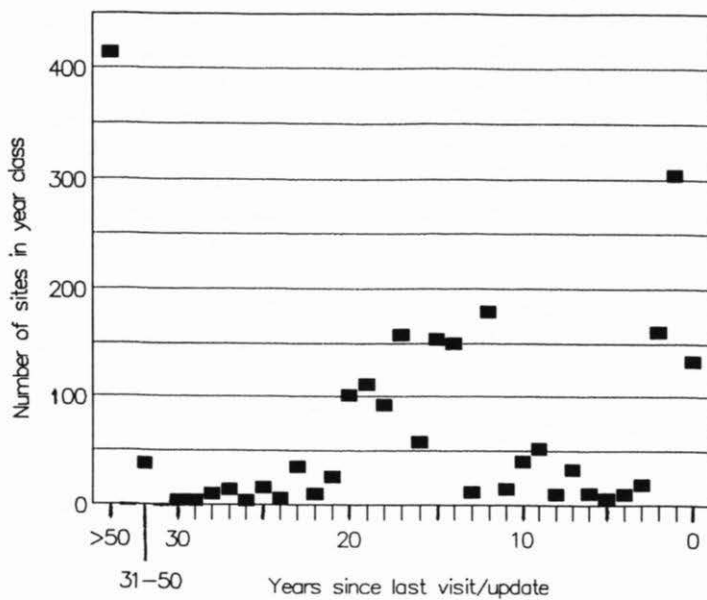


Figure 7. Current age distribution of records in the Waikato file.

AMOUNT OF INFORMATION IN RECORDS

At a minimum each record consists of a single site record form (SRF). Most records have additional bits of paper appended as follows:

- 16% have re-visit information
- 6% have site description forms
- 22% have a site plan on a separate sheet
- 1% have site cross sections
- 3% have location maps
- 19% have one or more photographs
- 8% have an enlarged vertical air photograph
- 9% have a high quality oblique air photograph
- 1% have an artifact record
- 9% have supplementary information, such as historical articles, newspaper clips, correspondence, copies of HPT authorisations, resource consents.

Overall the average record has 1.3 appended items. It is satisfying to find that 22% of records have a site plan, and 19% have photographs. Most photographs are recent however, and old photos are more useful. The biggest failing of the early recorders is that they rarely included photos. The admonition on the SRF to "attach a sketch map" as an aid to relocation has been ignored 97% of the time.

It is obvious that a lot of relevant supplementary material, in particular HPT and resource consent correspondence, is never finding its way into the file. It is also apparent from other sources, such as published work, that far more re-visits to sites, and even excavations, are taking place than are documented by revisit forms.

COMPLETENESS OF CENTRAL FILE

One question that no-one seems to have looked at is the extent to which the central file duplicates all the material in local files. There would seem to be a particular risk that items added long after the record was first filed locally might not be duplicated centrally. A spot check of 22 records showed that this is indeed the case. Of the 32 items added in the local file 24 had not reached the central file. Rather than regretting that these addenda aren't in the central file perhaps we should be grateful that they are at least accumulating in the local file. The overall situation is not as bad as these

figures suggest, since the 22 records chosen were definitely not representative of the file as a whole. All the same, this spot check indicates that researchers should use the local file rather than the central file when recovering information.

ACCURACY OF RECORDS

The accuracy of records is hard to define, and even harder to quantify. Inaccuracies are usually discovered only when sites are re-visited.

The grid reference is the most common locus of inaccuracy. Sixty nine per cent of records were compiled before NZMS 260 metric maps were in use, and differences between the old and new maps are such that site locations often shifted a couple of hundred and even as much as 400 m across the map when gridrefs were computer-converted from imperial to metric measure. Some of these shifts are obvious as when what was recorded as a ridge-peak pa now plots on the index map in the middle of a swamp. Other shifts are more subtle and more troublesome, as when a site gets moved from one property to another, and the shift is only discovered after a landowner has been put to much expense and trouble in a planning consent or HPA authority application.

The accuracy of other information on the SRFs tend to degrade with time. "Aids to relocation" become unintelligible as the landscape changes. "State of site" becomes obsolete as "possible future damage" comes to pass. "Owner" and "Tenant" change with amazing rapidity especially in the dairying areas where an unceasing succession of sharemilkers makes these boxes hardly worth filling in. "Description of site" retains whatever accuracy it had originally, except that distressingly often it needs to be transposed into past tense because features, or even whole sites, have disappeared.

COMPLETENESS OF COVERAGE

This is the most difficult question of all to answer. Over the years there has been little systematic effort to document what areas of the landscape have been adequately surveyed. For this stocktaking a very subjective attempt has been made to do this by inspection of the index maps and identifying areas:

I in which site recording is known to be substantially complete,

- II in which systematic recording is not justified because settlement density was probably very low eg in steep hill country of low fertility,
- III in which systematic recording is not justified because:
- (i) human activity has destroyed most of the sites (eg in orchards, plantations and towns), or
- (ii) environmental factors make systematic recording so difficult that it is better to wait for chance and accidental discovery of sites (eg in bushed hill country and in large swamps).

The remaining areas on the topographic map were then categorised as

- IV needing intensive recording (where site density is high, so that there are likely to be several sites on each property, and complete coverage can only be achieved by walking over all 'likely' areas),
- V needing extensive recording (where site density is low, and reasonable coverage is achieved by visiting only those locations suggested by landowners and local residents).

Both intensive and extensive recording are assumed to involve some revisiting as well as ground inspection of sites known only from air photos. Results of this exercise are:

	km ²	percent
Total land area in Waikato district	13900	100
Area in which recording is complete (I)	1950	14
Area largely devoid of occupation (II)	2050	15
Area where sites destroyed/unfindable (III)	2020	15
Area needing intensive recording (IV)	1550	11
Area needing extensive recording (V)	6330	46

Only 14% of the landscape has been "completely" recorded, mostly by intensive methods. However only another 11% needs intensive recording, so we can say that intensive recording is over half completed. While much ad hoc recording has been done, nearly half of the Waikato district still needs further extensive recording.

MAGNITUDE OF THE TASK REMAINING

By looking at areas already recorded it is possible to predict for each topographic sheet roughly how many sites are likely to be found during future recording (Fig 8). Intensive recording is likely to produce 1 - 2.5 sites per square kilometre, while extensive recording is assumed to produce 1 - 3 sites per 10 sq km. It is further assumed (on very shaky grounds) that category II and III land will eventually yield one site per 20 sq km due to chance discoveries which somehow get reported to the filekeeper. If these factors are entered into the spreadsheet together with the current site totals per sheet we find that:

Number of sites still to be recorded	4102
Number of sites already recorded	2774
Total number of sites expected	6876
Current tally as % of final tally	40%

Even though only 14 % of the Waikato has been intensively recorded so far, it seems that over one third of the recordable sites are already recorded. This figure is in reasonable agreement with that derived earlier from the proportion of pa. The discrepancy, if it means anything at all, indicates there are still pa to be recorded.

Experiment has shown that most sites discoverable on air photos have already been discovered, so it will require fieldwork to discover the remaining 60% of sites still waiting out there in the landscape. Experience indicates that about 4 sq km can be covered per day during intensive recording. Time taken for extensive recording is less predictable, depending on such variables as size of landholdings (locating and talking to landowners can take more time than looking at sites), but it probably averages out at about 10 sq km per day. It takes 3 days at the desk to write up a day's work in the field. Using these figures we find that

Person-days to complete intensive recording	388
Person-days to complete extensive recording	633
Total number of person-days in the field	1021
Total number of person-days	4084

Assuming that archaeologists work 250 days a year, there is about 16 years of work - paid or unpaid - needed to complete the Waikato site record file. And it needs to be done fairly quickly, because sites are disappearing fast.

CONCLUSIONS

In mid 1995 the Waikato site file contained 2774 records of Maori sites, of which only 6% contain information adequate for most purposes, while 16% indicate little more than the existence of a site at a particular location. Information on average is 19 years old, but 14% of the records are based on information over 50 years old. Only 14% of the Waikato filing district has been systematically recorded, and there are probably another 4100 sites waiting to be recorded, a task which will take about 16 person-years.

My conclusion from this is that while the SRS (as exemplified by the Waikato site file) is an excellent way of more-or-less passively accumulating archaeological information which would otherwise be lost, in its present state the Waikato file is only marginally adequate as a database for research purposes, and is quite inadequate for protection/planning purposes. More fieldwork will fix the first problem, but the second is due as much to the SRS not being designed for protection/planning, as it is to inadequate data. Meanwhile site record locations are being plastered all over District Council planning maps regardless of the fact that many of these records concern trivial sites, are wrongly located, inaccurate or out-of-date, and often describe sites now completely destroyed, thus generating needless trouble and expense for landowners, and generating ill-will towards archaeological objectives in general.

Amateurs have made an important contribution to the Waikato file. If there is anyone out there looking for a bit of near-virgin territory for a neat little site recording project, I would be happy to point them in any of several right directions, and provide as much assistance and encouragement as is within the capability of a regional filekeeper.

ACKNOWLEDGEMENTS

It hardly needs to be mentioned that all the above analysis is based on the efforts of fieldworkers and filekeepers active over the last 35 years. Negative conclusions in the analysis should not be taken to imply any criticism of these people. This analysis was much easier than it might have been thanks to the excellent condition of the Waikato file in early 1995, at the time when Neil Laurie resigned after 10 years as Waikato filekeeper. Neil had the big job of converting the file from imperial to metric. He was active in the WMAS for 27 years and president for several terms. A registered land surveyor and

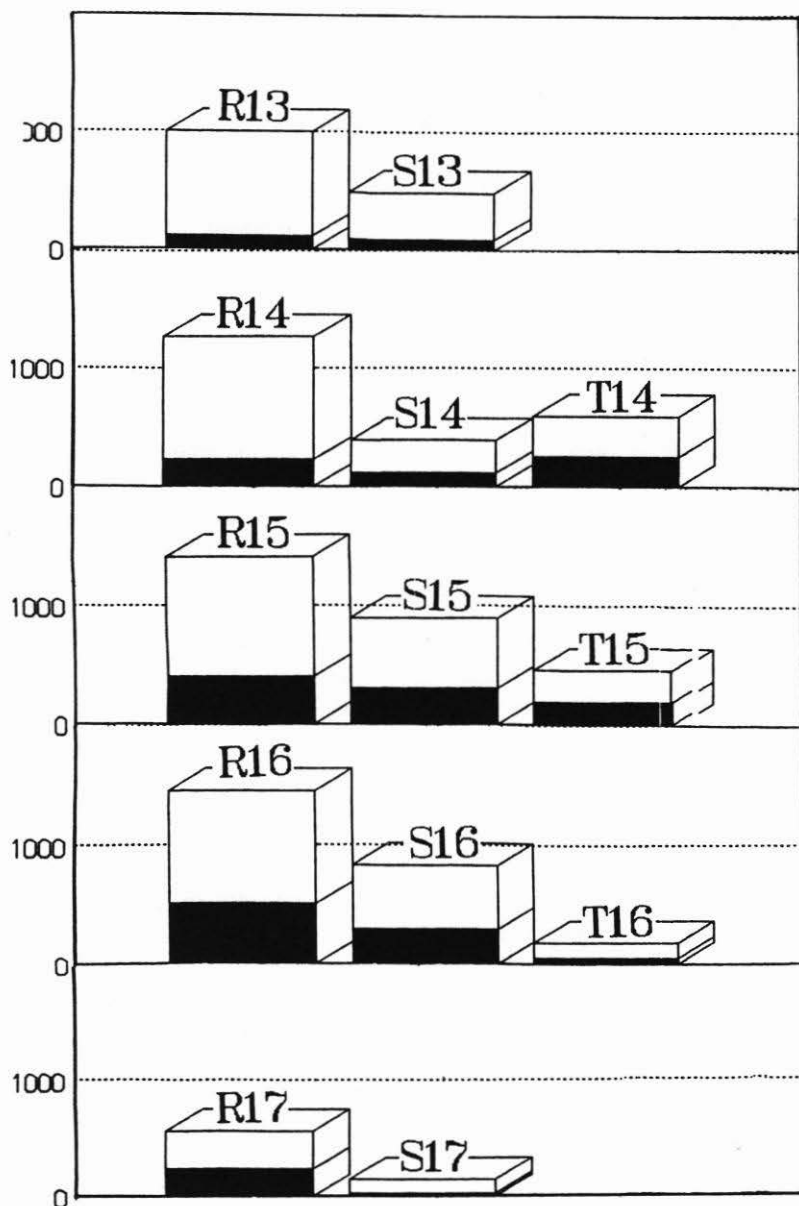


Figure 8. Current site tallies per topographic sheet (black) and predicted final site tallies (white).

farmer, Neil's professional skills and rural experience are evident in the high quality site plans and records he has contributed to the file. Here's to a long and happy retirement.

Tony Walton, Neville Ritchie and Neil Laurie commented on an earlier version of this article.

REFERENCES

- Challis, A.J. 1992. A review of archaeological site records for the Canterbury region. *Science & Research Series 45*. Dept of Conservation, Wellington.
- Edson, S.C. 1980. Interim Note on Site Recording in the Waikato by means of Aerial Photography. *N.Z. Archaeological Association Newsletter* 23: 241-243.
- Wilkes, O.R. 1995. Site recording, site types, and site distribution on the King Country Coastline. *Archaeology in New Zealand* 38: 236-256.