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230mm DIEBACK

PHOTOGRAPHY

FORMAT TRIAL

a good report.
a/Brandis.
5 July, 1985

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I N D E X

230MM DIEBACK PHOTOGRAPHY FORMAT TRIAL

At the end of May 1985, a request was made by A.P. & I Bunbury, to compare 230mm format Dieback Photography (in relation to all aspects of interpretation and mapping) with the existing 70mm format. This included comparisons between interpretation equipment and technique (office and field), also mapping and film manageability.

1. EQUIPMENT

1.1 Office

1.1.1 Photographs

When examining the photography quality, flying conditions had to be taken into account as they were far from ideal.

(a) Dia-positive Transparencies

The transparencies were manageable and the resolution good. A laminate was applied to protect them from moisture and scratching. This however, did not interfere with resolution to affect interpretability.

(b) Colour Photographs

The photographs were unusable during initial interpretation stages. The photograph resolution was extremely poor. This was partially due to the matt finish of the photographs. Reflected light made it impossible to distinguish it from plant deaths.

1.1.2 Wild "Aviopret" Apt.1

The wild "Aviopret" was loaned from the Main Roads Department, for the period covering the 230mm format trial. It consists of a mobile light table and a stable base arm, to which a mirror stereoscope was attached (other viewing pieces are available). The main body was connected to a white base board, which proved awkward and occupied much of the desk top. This board could be removed and the base arm attached to the desk top. The mobile light table can easily be removed to provide a workable desk top.

This stereoscope gave sufficient light and magnification (1x or 3x) for indicator species death location. Using 1x magnification, topographical relief was more than adequate in respect of hygiene map production and disease impact.

The wild "Aviopret" proved almost faultless with only a few improvements and additions required. These were:-

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(a) The mobile light table requires some means of securing the right hand photographs. This is required to aid stability, for both viewing and marking of deaths and boundaries.

(b) A rough bordering block was used during the trial, made from a strip of cardboard on the top edge and down from the top right corner.

(c) A dimmer switch is required as the existing light source is extremely strong. Initial eye strain occurred, but with the incorporation of both dimmer and better photo quality, this problem will be reduced.

1.1.3 Mobile Perspex Viewing Table

The mobile perspex viewing table (supplied by A.P. & I Bunbury was clumsy and inefficient. The protruding metal elbow is susceptile to weakness in all joins. This lead to frequent loss of stereo vision due to base skew, which occurred often. The protruding elbow also occupied excess desk space. The system of using magnets as a means of holding the photographs, proved unsatisfactory. This was due to the obscuring of the photograph by the metal bases on underside of the table to which the magnets adhere.

1.1.4 Richards Light Table

Utilizing the lens equipment already fitted (Bausch and Lomb-Zoom 240). The table proved adventageous for magnification. Resolution was good up to 15x magnification, however, the time involved in setting up each set of photographs for stereo vision was too excessive to make it practicle for interpretation purposes.

1.1.5 Interpreterskope

Magnification, once again was good for initial interpretation purposes. Disadvantages in using this machine were found, and included:-

(a) Setting up of Photographs to give stereo vision was time consuming due to the many adjustments required.

(b) The light source was to dull, giving a yellow light which deteriorated interpretation conditions.

(c) When used for topographical relief, it was outclassed by the mirror scope. The "Interpreterskope" giving a confined area of vision when compared to the mirror scope.

...3/-

1.2 Field

1.2.1 Photographs

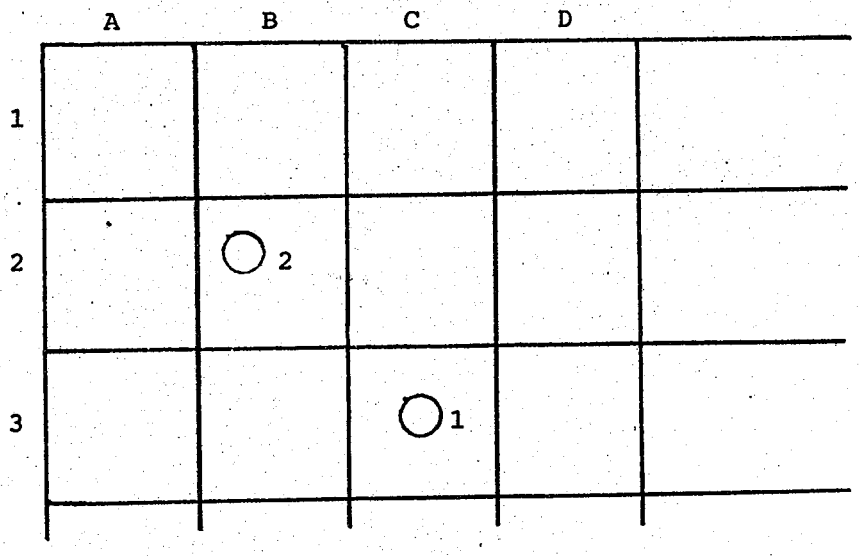
Only the "Dia-positive transparencies" were used in the field as they proved to be the most suited for the work required. Due to the poor photograph quality (over-exposure, due to sunlight) navigation was difficult in places. Colour photographs were not put to use as the field support table was to bulky, heavy and awkward to use.

1.2.2 Solar Light Table

This table consisted of a perspex sheet with carry strap and two bulldog clips to secure the transparencies. Despite its simplicity , it was the most practicle. Some improvements are required, and these are:-

(a) A secure system of holding the photographs steady must be found, as the bulldog clips, although useable were unstable. A locking border, similar to those used for holding X-Rays would be ideal.

(b) A grid system needs to be applied to the right hand side of the board. The aim of this is to aid in location of sample points for sample result identification. A possible system for use could be as follows:-



With the photograph being aligned using the fiducial marks, this system is simple and workable.

...4/-

1.2.3 Wild Field Stereoscope

The Wild Field Stereoscope was well suited for field navigation. Problems arose when it came to plotting boundaries. Due to the positioning of the mirrors, difficulty in plotting, whilst viewing the photograph occurred (we were unable to fit the pen under the stereoscope). To allevaite this problem, leg extensions were added. This solved the initial problem but developed two more:-

(a) Loss of magnification and subsequently, plotting accuracy.

(b) With the addition of the extensions, the stereoscope became extremely unstable and prone to collapsing when pressure of any type was applied.

After one week of experimentation, a probable solution was found. This involved locating a starting point at the centre of the field of view. The marker pen could then be moved to the left to draw a boundary. Upon reaching the extremity of the field of view the stereoscope is then moved until the marker pen is located at the centre again.

This resulted in an accurate boundary. (plotting

2. METHOD OF WORK

The method of working 230mm format photography is basically the same as that of 70mm format.

2.1 Indicator Species Death Map

Due to the distance between principal points of each photography. Accurate plotting of I.S.D.'s could not be done as with the 70mm film. A simple system of high-lighting each principal point on which I.S.D.'s had been plotted (as per 230mm initial interpretation). This was sufficient to draw attention to which photographs had I.S.D.'s marked on them (See Appendix 1).

I.S.D. Map - An I.S.D. map was produced to 70mm standard from 230mm format. This was done by transferring I.S.D.'s from 230mm to 70mm and then to a map. The purpose of this exercise was to see which format was better suited to I.S.D. location. (and detection)

The resulting maps proved interesting and following conclusions can be drawn from them:-

1. Both formats are suited to I.S.D. detection.
2. 230mm format provided a better overall picture of dieback infection.
3. Indicator species such as Blackboys are more prominent on 230mm format although no isolated deaths were found that were restricted to one format only. (See Appendix 2 & 3)

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2.2 Field Navigation

Navigation was the same as when using 70mm format, only quicker. Due to the area covered by each set of photographs, problems with changing runs were negligable. It was also possible to navigate without the use of the stereoscope which reduced time spent on navigation by up to three times.

(4mm)

Use of magnifying glass?

2.3 Sample Point Map and Sample Information

Again, due to principal point distance, information concerning samples is simply noted adjacent to each principal point. Location information is written as follows:-

RUN: 3 PHOTOGRAPH NO: 2155 SAMPLE NO: 4

The sample point is then marked on the photograph with its identification number (See Appendix 4).

2.4 Final Plotting

It is proposed the the final mapping shall be done by Mapping Branch, Como.

Boundaries are transferred from the Dia-positive transparencies onto the colour photographs. These photographs are then sent onto Mapping Branch. A system of transferring boundaries from photograph to map have yet to be finalised.

Ground work on information recorded on the photographs is subject to change by Dieback interpreters only. Mapping Branch will be responsible only for production of final draft maps.

3. GENERAL COMMENTS

The 230mm format is both effective and efficient. Probably the most noticeable difference was time, both in the office and field.

e.g. (a) Initial Interpretation

230 mm	1 Full Working Day	920 ha.
70 mm	1 Full Working Day	590 ha.

(b) Field Mapping

230 mm	1 Full Working Day	98 ha.
70 mm	1 Full Working Day	45 ha.

The differences are due mainly to:-

3.1 Office

(a) Less time is required in changing photographs than the 70mm rolls.

(b) More area can be interpreted between changes of frames due to the area covered by 230mm photography.

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3.2 Field

(a) Less time is required in changing photographs than the 70mm rolls.

(b) More area can be mapped between changes of frames due to the area covered by 230mm photography.

(c) 230mm not damaged by rain due to the lamination of the photographs, subsequently more working time is available.

(d) Less time is lost due to navigational errors because of the ease in following boundaries for long distances, between run changes with 70mm format, fun changes may occur every 250mm (approx.) compared with once every 1,000m (approx.) on 230mm format.

Other advantages of 230mm format over 70mm format are:-

(a) Photographs are light in weight and only 5-10 are required to be carried at any one time. 70mm film rolls are both bulky and heavy and take up valuable space in the back packs.

(b) Office storage and cataloguing is easier and more efficient.

3.3 Disadvantages

Only one major disadvantage was encountered when using 230mm photography. This was its susceptability due to over-exposure due to sunlight. Due to the area coverage of one photograph, over-exposure can render large areas, uninterpretable.

70mm was advantageous in this case as due to the small area coverage and run to run overlap, it may still be possible to interpret much of the over-exposed frame.

4. CONCLUSION

After one month of 230mm format interpretation, it seems that this system is well suited as an aid in Dieback Mapping.

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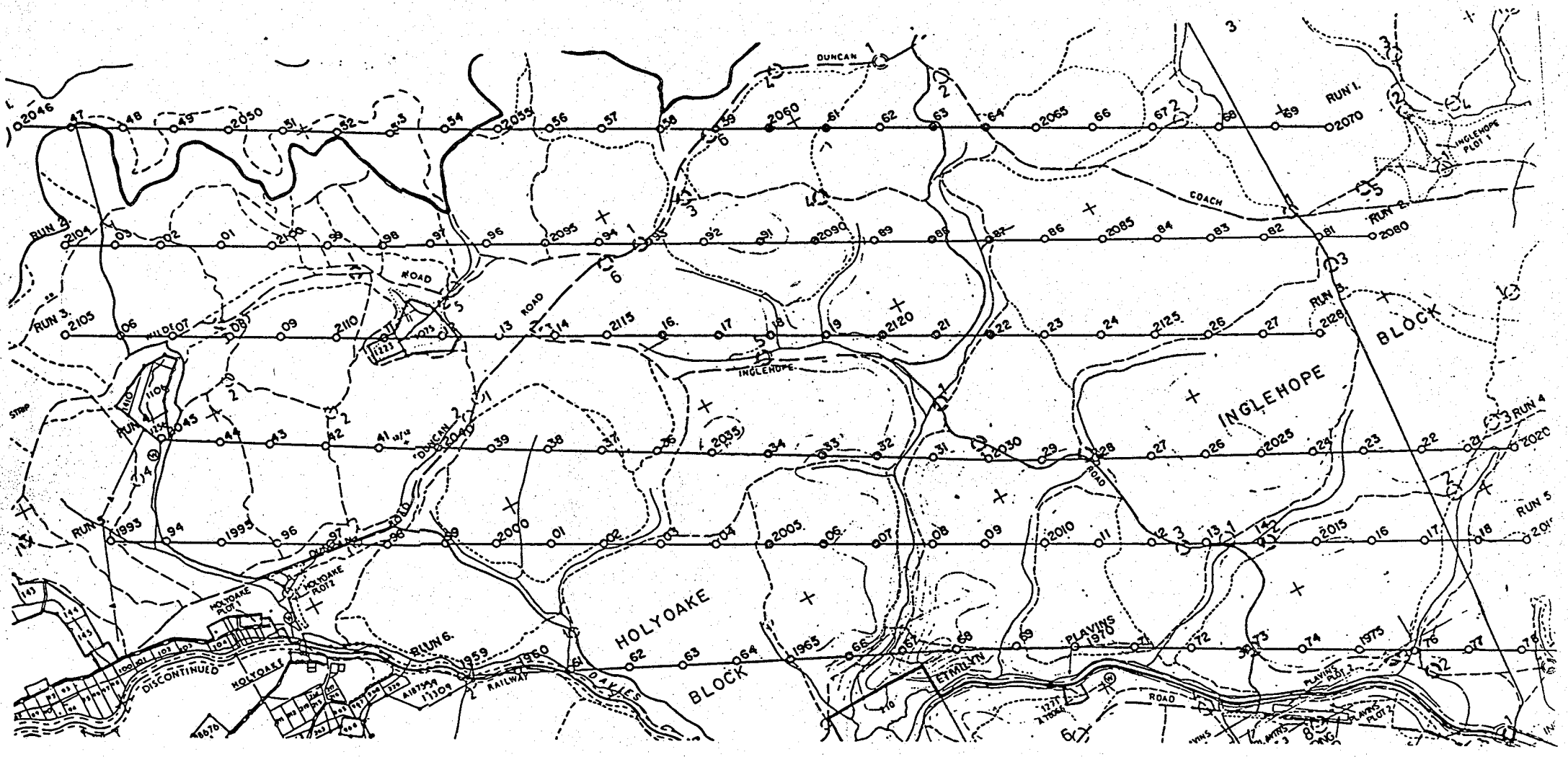
MM:er

APPENDIX 1 - Indicator Species Death Map.



APPENDIX 4 - Sample Point Map.