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Maps Collection Control Status Report 2006

Presented to the
Collection Development and Management Committee
National Library of Australia

The aim of this paper is to provide a status report on current methods of collection control and access to maps, and to place these in the context of changes and trends in publication of maps.

The paper recognises that maps present specific issues and challenges for the Library, including specialist knowledge required for cataloguing, management and interpretation of data, and access. It also presents unique opportunities for access reflecting the particular characteristics of mapping data. Progress to date on providing enhanced management and access is highlighted.

Following this introduction, the paper is divided into four main sections :

1. Publishing environment
2. Map claiming
3. Resource description and access to cartographic materials
4. Digital management issues

The initial section on 'Publication environment', suggests changes and refinements to acquisition of maps, particularly in electronic formats. The Maps Claiming section outlines progress made to streamline claiming processes, and bring them onto Voyager. 'Resource description and access' describes the cataloguing program and some of the challenges of maps description, and some measures taken to address this and provide improved access.

There are several recommendations listed below for CDMC consideration. The report and recommendations are based on consultation and research over the past six months following changes in personnel in Maps, and reflect processes launched by the Library to deliver efficiencies.

Recommendations:

- i. That CDMC endorse the position taken not to acquire category 'D' and 'E' physical format mapping products.
- ii. That Paragraph 8.8 of the CDP, in the section regarding Maps, should be amended as part of the process of review of the CDP.
- iii. That written procedures for assessing digital mapping be developed.

1. Publishing environment

Underpinning acquisition and management of maps, there has been an increasing trend from paper based maps to the provision of map data in digital formats, both in physical form, and online. While this trend away from paper maps has been assumed to be the case, this has been based on anecdotal contact with publishers and increasing numbers of born-digital

items received into the collection. A survey of key publisher websites was needed to establish the direction and pace of this trend.

All state lands and geological survey departments were contacted, or websites trawled, as time permitted between May and September 2006.

Government sector publication constitutes the overwhelming majority of map products, though similar issues arise in regard to commercially produced mapping through agencies such as HEMA maps.

Review of publishers revealed considerable variety of approaches to making maps and maps data available. It is also clear that many government and commercial agencies still have a considerable output of paper maps. Geoscience, for example, in its 2006 catalogue, lists eleven series of mapping available only in paper format, in addition to a number of individual titles, unavailable in other formats (in its *Product Catalogue 2006* <http://www.ga.gov.au/bridge/catalogue.jsp>). Geoscience also lists a growing number of data sets, particularly in areas such as marine, petroleum, geological and geophysical areas, that are available only using raster or graphical software.

This breadth of product range is characteristic of government mapping, and a number of state agencies are now also matching paper maps with PDF and other generally available products, in addition to specialist data and software products. A sample of products for two state agencies surveyed is provided in Appendix 1.

In the past two years, the Library received the following numbers of paper maps from government suppliers.

	Year	State	C'wlth	
Map maps and ROMs or licensed	2005-2006	715	110	producers may also provide map information on CD-DVD-ROMs, and via free or downloads from the Internet.
	2004-2005	692	87	

This is particularly the case in areas of geological science and natural resource management, are produced not as printed maps or even images, but as layered data available in hard formats, or through database access. In either case, but particularly for databases, access is often licensed, and in all cases requires that specialist GIS and graphical software be supported. The purpose of this form of data is to allow users to add-value to the base data provided, or in some other ways utilise it.

While this trend is most pronounced in areas of geological survey, it is true to varying degrees across all government and commercial producers, including primary industries and environmental departments, planning, tourism, business, industry and other agencies, authorities and map specialist companies.

The Library has accepted 55 CDs and DVDs over the past two years containing digital mapping products.

Examples are provided in APPENDIX 1, however, it is helpful to categorise the variety of maps and map data produced by method of delivery.

Maps output may be categorised as follows:

- A. Printed paper maps and explanatory text
- B. Digital map images and text files
- C. Customised area on request
- D. GPS products
- E. Digital Raster and Vector graphic files

Collecting agencies such as the National Library and State Library services have traditionally collected the first category, however an increasing trend is apparent in the market to digital images. It is suggested in the following paragraphs that category B presents some ongoing issues for the Library though some in this category may be considered valid for the collection, while items of types C, D and E are most often out of scope for collections such as the National Library.

A. Paper products

While maps data have been compiled using the most up-to-date and detailed mapping tools available, paper versions are still regularly reproduced from old and updated mapping. Geoscience Australia, the largest vendor of geoscientific information, continues to provide the majority of its topographic (land contour) mapping in this format, while almost all geological, petroleum and marine mapping is held in databases and made available in online or disk formats.¹ Agencies at the state level, such as the [Primary Industries & Resources Department of SA](#) (PIRSA), also produce paper maps of topographic series, and also some (though a decreasing number of) geological and other series in paper form:

[Paper series](#) (at various scales)²:

- State level maps – final and preliminary geological maps
- Geological maps – area by area index
- Geophysical maps – area by area index
- Resource maps – area indexes for soil, hydrology, minerals

Other sectors that have traditionally been major sources of paper maps collected by the Library include planning and lands (parish, county mapping), electoral, travel and tourism, parks, environment, and others. Of these, many publishers continue to issue paper maps, while the large planning and lands sector has moved noticeably to online or disk delivery methods.

¹ Geoscience Australia, *Product Catalogue 2006*, <http://www.ga.gov.au/bridge/catalogue.jsp>

² PIRSA, *Minerals Maps*, <http://www.pir.sa.gov.au/pages/minerals/data/maps.htm>

However, even large departments such as the NSW Department of Lands provide a significant output of hardcopy mapping in addition to spatial information products and services. Paper maps include a standard topographic map series for NSW in 1:25,000, 1:50,000 and 1:100,000 series, regional touring maps, a National Parks map series and Hawkesbury River waterways.

Commercial suppliers such as HEMA Maps continue to produce a wide range of wall maps, atlases and guides in paper form, in addition to a range of GPS supported products.

It is likely that over the coming years there will be a decrease in the number of maps in paper form received by the Library, as agencies move increasingly to digital maintenance and products, even for topographic series, however it is anticipated that there will remain an ongoing if more limited market for paper maps for the foreseeable future. In areas such as tourism, GPS systems can be expected over time to have an impact on the production of paper maps.

B. Digital map images and text files (PDF and other image formats)

As an alternative to retaining stock of printed maps, some agencies make individual maps and series available as PDF products and downloads. Some Australian topographic and geological series are now being published as compilations of images on CD or DVD. These may be an exact copy of the paper version, or new maps that are only produced in digital form.

It is suggested that these published digital map compilations should be collected by the Library, particularly where no other format is available, but also where they represent an accessible option to large numbers of individual paper maps. Examples are included in Appendix 1, and include popular topographic and boundary maps of Australia at various scales, as PDF, JPEG, GIF and other image protocols. Also in this category are compilations produced by state lands departments or genealogical societies comprising images of out of copyright parish and county maps.

C. Customised area on request

Some agencies are collecting data in digital form, or converting data which is stored and made available on demand. This is usually done using online interfaces and pick-lists from which images of an area may be specified and an image download, disk or printed map is then supplied.

The approach to delivery online is varied, exemplified by the following:

- [Queensland Department of Natural Resources & Mines](#) provides historical property maps on PDF by request only, as does the NSW Lands Department.

- Vicmap provides a search index to allow users to request individual map sheets from its 1:30,000 topographic series as PDF files or prints. The relevant publications or notes are also available in this form.
- Western Australian Department of Industry and Resources (DOIR) makes most of its richly detailed geological maps available by area, as (compressed) PDF downloads available off their website, or will supply the uncompressed PDF or printed sheets on request (they have two large digital printers), based on coordinates supplied.

It is not anticipated that maps in this customisable form would be collected.

D. GPS products

There is an increasing trend, particularly in commercial travel and tourism, towards products issued for use with GPS mapping software and receivers.

GPS mapping software typically runs on a PC or laptop and will work with various proprietary GPS receivers for the upload/download of waypoints, routes and tracks and for real time tracking of GPS position (eg 'Moving Map'). While these do not generally require a great deal of specialist knowledge or technical applications, software such as the proprietary 'OziExplorer' are required with a GPS receiver to make use of tracking and other features.³ The downloads allow the user to work with maps created from scanned or digital maps, and are used as a real time navigation aid.

A recent search on Libraries Australia showed these products are most usually found in public libraries for use by tourists and other patrons. The National Library has since 1999 accepted a few GPS supported products into its collection. Consultation with State Libraries of NSW and Victoria map curators indicate these are not currently collected.

There is considerable technical innovation in this area, as well as proprietary involvement and built in obsolescence. It is assumed that public libraries treat the products as having only short term use (ie are discarded in favour of later editions of the data, software and physical format), and make them available for loan. It is not known whether many or any public libraries actually support them for use on library PCs.

It is an area worth watching, particularly if stand alone travel maps are discontinued, however for the time being the maps themselves are generally available in hardcopy.

E. Raster and Vector graphical products

Raster graphics is the representation of images as bitmaps, and provides a backdrop for making visual mapping products usable. Vector graphics is a broad term used to cover a range of specialist software programs, allowing the user to create an image and to allow interpretation, eg the ability to rotate, move, mirror, stretch, skew, generally transform and combine objects, create 3-D and other effects.

³ OziExplorer GPS Mapping Software, <http://www.ozieplorer.com/>

Information is often layered, for example, data may be arranged in themes - elevation, habitation, hydrography, infrastructure, terrain, transport, utility, vegetation etc.

The Library has received mapping in graphics formats into the collection since the late 1990s (Examples are included in APPENDIX 1). These are aimed at cartographic and other professionals engaged in land use and resource management, who view and manipulate spatial data and require specialist software to be installed. To make matters more complex, the products may also include photographic images on PDF format as reference tools, however many already exist in the collection.

All government agencies surveyed provide a range of raster base-images with vector graphics available to geospatial professionals. Graphics may be made available as DVDs or online, and are generally packaged to suit user groups, defined both by professional area and software standards used. Many products require regular license updates, as for other software.

CDs and DVDs of 'Type E' mapping may comprise datasets and databases, files (eg ESRI shapefiles), and require a customised viewing application to display the data. There are often PDF grid sheets included to allow the user to view and navigate the datasets, though these are of limited value on their own.

It is suggested that these raster and vector graphical software and data should not be collected by the Library.

Suggested next steps for acquisition of physical format digital mapping

The Library has addressed collection of physical format digital mapping in the CDP. The CDP (4.1-4.5) defines these physical format electronic resources as those that are published on a physical carrier, such as floppy disks, CD-ROMs, DVDs and VCDs.

Paragraph 4.5 states:

"The Library collects physical format electronic publications, primarily digital resources, for the Australiana collection. Pending Commonwealth legal deposit legislation for electronic publications, the Library negotiates with publishers and creators to acquire selectively through voluntary deposit, Australian publications in formats including CD-ROMs, DVDs and floppy disks.

Paragraph 8.8, in the section regarding Maps, further states that

'Electronic spatial data, either on CD-ROM, disk, online or as printouts, is acquired selectively with the software necessary to provide access to the data.

Selective acquisition of image files and compilations that complement or replace acquisition of paper products may be anticipated as an increasing trend. As with paper maps, these products require an assessment regime and process prior to acquisition.

Attention is paid to procedures for 'Handling of Physical Format Digital Materials' when receiving digital maps items, however there are no resources allocated, procedures nor relevant software installed to review incoming digital maps. As an interim measure, following discussion with Maps cataloguing team, Government and Legal Deposit, categories of graphical software on physical format are neither being sought or processed. It is suggested that guidelines may be needed to assess the content, data standards and operating software.

Pending CDMC's consideration of this issue, Maps will not select or accept into the collection any GPS products, and Geodatabase, ArcView Shapefile, MapInfo TAB file or other vectored formats. Much of this data is also maintained within database environments, and this is addressed in the section on PANDORA.

Further consultation with publishers, as part of the Claiming process, will be needed to review developments.

Recommendations

- i. It is recommended that CDMC endorse the position taken not to acquire category D and E physical format mapping products.
- ii. It is recommended that Paragraph 8.8 of the CDP, in the section regarding Maps, should be amended as part of the process of review of the CDP.

2. Claiming of mapping products

Claiming processes

The Library has a process in place for claiming printed material that is covered by Legal Deposit provisions, through the Legal Deposit unit of Monographs branch, and for ordering government material, through the Government Deposit unit. Beyond the general obligation to deposit printed material, individual maps have been claimed using a separate process by the Maps Branch of the Reader Services Division.

While it has been expedient for Maps staff, who make the initial contact with publishers, to request and receive the individual items, and then forward them to Cataloguing staff, it is recognised there are efficiencies in maintaining a process that utilises Voyager's reminder/update process.

Maps is an area that has over the years provided direct contact with publishers - developing relationships with publishers is important to stay in touch with changes in the industry and product developments. In July the draft report of the Collection Processing Working Group recognised that the existing system used by Maps is resource-intensive, and was infrequently

carried out, contributing to a risk that the collection will develop gaps. It was recommended that the process for claiming Maps be changed to utilise the efficiency of the automated Voyager system, in order to use details collected to build a targeted collection.

Actions to date:

Subsequent to the draft report, Maps staff met with Government and Legal Deposit to address issues associated with bringing the Maps claiming process into line with other printed materials.

It was acknowledged that if claiming of specific map items is to be conducted, greater attention to prioritising the key producers is needed. One of the reasons identified for infrequency of claiming was the desire to be comprehensive, however it is recognised that there are limited resources available to carry out claiming tasks.

It was agreed that Maps would select two states, South Australia and Tasmania (these states have not been specifically claimed for several years), and prioritise the key publishers.

During August – October 2006, a list was developed by Maps staff of key government and commercial producers in Tasmania. These are in process of being contacted and it is anticipated this task will be completed in November.

Claiming for South Australian mapping will commence in December and be completed early in 2007, and that other states will be covered during the year as resources allow.

It is anticipated that over time, as for other printed material claiming, once an item is claimed through Voyager and doesn't arrive, automatic updates will be sent to the vendors at regular intervals.

It should be noted that some digital materials are 'lodged' as part of a perceived responsibility to deposit them, regardless of efforts to claim individual items. Regular claiming will help inform acquisition of digital resources.

3. Resource description and access to cartographic materials

Current status of cataloguing

Collections Management Division employs three staff to catalogue maps. Priority is given to current acquisitions, followed by rare map arrears, Australian map arrears and lastly overseas map arrears. The Library's current practice is to individually catalogue rare maps and all Australian maps at the highest level. Stand-alone overseas maps are catalogued individually at a low level and overseas maps in series are only catalogued at a series level with a serial check-in. Aerial photos are catalogued at a series level (e.g. New

South Wales aerial photos) with low level records created for the areas photographed. Individual maps within rare atlases that have been selected for digitisation are catalogued at a low level.

Manual cataloguing of maps is resource intensive and requires specialist knowledge. Therefore, more cost-effective ways of creating catalogue records are being explored. For example, brief records for the Library's collection of Papua New Guinea aerial photographs have been created from data in a spreadsheet. Two volunteers are now entering data for the Library's Australian aerial photos into spreadsheets and the information will then be concatenated and used to create brief bibliographic records. An added bonus of this process is that an accurate count will be obtained for the number of aerial photos in the collection.

The feasibility of creating catalogue records using metadata obtained from publishers is also being explored. Data has been received from Geoscience Australia for the 1:250,000, 1:100,000 and 1:50,000 topographic and geological maps. 1035 records for 1:100,000 topographic maps and 181 records for 1:250,000 topographic maps have so far been created. However, this has not been as successful as was hoped because some cataloguing has already been done on these series and automatic cross-checking is not possible. The manual cross-checking required means that the time involved is probably the same as creating an individual record for each map. Nevertheless, it is still considered desirable to obtain metadata from publishers of maps, particularly for compilation of maps on CD and DVD of 200-300 maps, which are difficult to manually catalogue as the resource would be inaccessible for an extended period while the cataloguer views the maps and prepares catalogue records.

Maps cataloguers and Maps Section staff have also been exploring ways to facilitate user access to a larger proportion of the collection, particularly to the estimated 116,000 uncatalogued maps, and to foster greater end-user self-sufficiency. A large percentage of the Library's maps collection consists of maps-in-series and it has been a long-standing convention in the Maps Reading Room to supplement catalogue records for maps-in-series with paper index sheets or grids serving as visual finding aids to indicate holdings. A trial is being conducted in which the index maps for a small closed (i.e. no longer published) map series of Sumatra were digitised and the maps held by the Library checked in against the relevant records associated with the series.

The image that has been attached to the record allows visual identification of holdings for regions, and navigation from the parent to the region. On-site and remote users are able to view the index maps in the Library's digital delivery system, ascertain the extent of the Library's holdings and would in future be able to submit an electronic call-slip for the required map sheet/s.

It should be emphasised that this is not a complete alternative to item level cataloguing as users cannot search for the names of features and places on individual maps. Nevertheless, the feasibility of extending this approach to larger map series will be explored.

4. Digital archiving and preservation

MAGDIR (Managing Australian Government Digital Information Resources)

The online trend identified in the report section, 'Publication environment', will mean that the collection management focus will shift to guaranteeing long-term access to Australian mapping data, in addition to controlling existing paper-based collections.

The draft MAGDIR agreement is an important inter-agency commitment towards safeguarding Australian geospatial data in digital form. MAGDIR recognises that GeoScience Australia has responsibility for the management of national geoscience and geospatial data that it creates and which other bodies create for GeoScience.

While GA has a national responsibility, there are also large state and commercial agencies that produce maps and mapping data. Recent liaison by Maps staff with the WA geological survey department, VicMaps and other agencies, indicate recognition of on-going digital management and access responsibilities, however it is likely this is variable across the sector.

It is hoped that as part of the growing awareness of the need for spatial data infrastructures and ongoing management, the MAGDIR agreement may serve as a model for similar agreements across government and commercial sectors.

Maps and Digital Preservation staff will continue to inform MAGDIR as the agreement progresses.

Assessment of digital mapping products

In terms of the management of digital maps acquired by the Library, it is acknowledged that there is a legacy collection including unsupported digital mapping software and data, collected since 1998 (Examples in Appendix 2). While some of this digital map collection (Map mt and nmt) has been identified as being within current CDP definitions, overall the collection would require resources to assess for retention/access or disposal of non-CDP materials. It is anticipated that CDMC approval sought in the report for exclusion of graphical software products, will prevent an enlargement of this legacy collection.

The report recognises that while attention is paid to procedures for 'Handling of Physical Format Digital Materials' when receiving digital maps items, review and assessment of the *content* of mapping products is carried out as resources allow by Maps, in consultation with Digital preservation staff. Further, the report has noted that no written procedures currently exist.

Recommendation iii.

That written procedures are developed for assessing physical format digital mapping.

PANDORA and Australian domain harvesting

As more map images are becoming available in digital form, the Library is also considering access to maps within the context of the PANDORA selection guidelines.

PANDORA's selection guidelines

<http://pandora.nla.gov.au/selectionguidelines.html#genGuide>, say "In general, online maps produced by organisations which have a legislative responsibility and a commitment to ongoing access and preservation will not be selected, e.g., GeoScience Australia, the Defence Department, Bureau of Meteorology, and the various State Lands departments.

Nevertheless, it is anticipated that the Library will continue to selectively collect some digital publications of general public interest produced by mapping publishers, and Maps staff will continue to suggest high value sites for consideration for PANDORA or for inclusion in domain harvesting. Recently, Maps staff have identified mapping formerly available in print form, or even in a digital physical format, that are now only available online.

In regard to harvesting content, whether for PANDORA or domain harvesting, there are technical limitations of webcrawling, especially in regard to complex and database driven websites, that mean a great deal of maps information would not be accessible. Equally, and outlined in the section of the report addressing maps publication, there are categories of digital maps that may be readily available that fall within priority CDP categories. These include digital map images and text files in PDF and other image formats. Where not prohibited by the technical limitations of webcrawling, especially into complex and database driven websites, some of these images may be accessible in this way.

A sampling of maps sites by PANDORA staff of domain harvests undertaken has revealed that where the site is not database driven, for example the NT geological survey website, fairly extensive capture is possible. As a result of the recent surveying of the maps sector by Maps staff a number of key map producing websites have been identified. It is possible that this information can form the basis for seed lists that could give weight to selected map sites.

As a by-product of Maps Claiming, maps staff will provide a list of key sites for addition to the seed lists from any future domain harvesting.

APPENDIX 1. Product ranges for two agencies surveyed.

Western Australia - Department of Land Information

<http://www.dli.wa.gov.au/>

Category	Format: paper	Format: image	Db Customised request	Set area graphic products	GPS
Historical maps & plans; pastoral and rangeland Maps	Paper sheets				
State and general reference maps (various scales)	Paper sheets	PDF		Vector files (DGN, DXF)	
Topographic maps and WA coastline series	Paper sheets	PDF		Vector files (DGN, DWG, Shape, DXF)	
Admin. boundary maps	Paper sheets	PDF	On demand	Vector files (ESRI Shape files, or DGN, DXF, DWG)	
WA land & property boundaries	Paper sheets	PDF	Spatial Cadastral Database (Norm files, ESRI Shape files, DGN, DXF, DWG)	Vector files (ESRI Shape files, DGN, DXF, DWG)	
Other WA property information			Landgate Map Viewer (aerials, topo-maps)		
Perth Metropolitan maps & directories	Sheets and bound	PDF			StreetExpress (regions on request in GPS-ready formats)
Regional city & town Maps	Paper sheets				
Traveller's atlas of Western Australia	Bound				GPS-ready formats
Native Title Maps	Paper sheets/ reports	PDF			
Claims Registered at				Design files:	

National Native Title Claims Tribunal (NNTT)				ArcView, Map Info and Excel digital files)	
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South Australia Department for Environment and Heritage

<http://www.environment.sa.gov.au/mapland/index.html>

Category	Format: paper	Format: image	Db Customised request	Set area graphic products	GPS
Aerial photography	Paper sheets		Digital Image Data Base (DIDB)		
Satellite imagery			Digital Image Data Base (DIDB – segments available on DVD)		
Topographic maps	Paper sheets	PDF	Digital Image Data Base (DIDB – segments available on DVD)		
Thematic mapping (Postcode maps, general reference, council areas, hundred/counties. Tourist maps State pastoral map	Paper sheets				No GPS tourist products
SA land ownership and valuation	Paper sheets	PDF	Spatial Cadastral Database (Norm files, ESRI Shape files, DGN, DXF, DWG)	Vector files (ESRI Shape files, DGN, DXF, DWG)	

APPENDIX 2: Digital mapping product examples

Category 'B' - Digital map images and text files (PDF and other image formats)

As an alternative to retaining stock of printed maps, some agencies make individual maps and series available as PDF products and downloads. Some Australian topographic and geological series are now being published as compilations of images on CD or DVD. These may be an exact copy of the paper version, or new maps that are only produced in digital form.

It is suggested that these published digital map compilations should be collected by the Library, particularly where no other format is available, but also where they represent an accessible option to large numbers of individual paper maps. Examples are included in the Appendix.

- Geoscience Australia provides topographic, bathymetric and boundary maps of Australia at various scales, as PDF, JPEG, GIF and other image protocols.
- Western Australian Department of Industry and Resources (DOIR) produces sets, such as its 1:100 000 and 1:250 000 geological map series, on DVD-ROM, (covering all latest edition maps in these series), and its geological atlas on CD-ROM contains all 168 1:250,000-scale geological series maps of Western Australia.
- Northern Territory Geological Survey provides maps in PDF on DVD-ROM, for its 1:100 000 and 1:250 000 scale series (previously in paper). NT also provides a CD with the explanatory notes to the series.
- Compilations produced by genealogical societies comprising images of out of copyright parish and county maps.

Collection example:

Record ID: 524519

Author: [Geological Survey of Western Australia.](#)

Title: Australia 1:100 000 regolith geochemistry series. Sheet 3448, Nicholls [cartographic material] / Geological Survey of Western Australia ; compiled by A.J. Sanders ; cartography by M. Vicentic.

Edition: 1st ed. 2002.

Scale: Scale 1:100 000 ; universal transverse Mercator proj. (E 12230'--E 12300'/S 2430'--S 2500')

Publisher: East Perth, W.A. : Geological Survey of Western Australia, Dept. of Mineral and Petroleum Resources, 2002.

Description: 2 maps : col. ; 56 x 51 cm., on sheet 72 x 82 cm. in plastic pocket in booklet + 1 booklet (vi, 36 p., [28] leaves of plates ; 30 cm.) + 2 computer optical discs (4 3/4 in.)

Staff paper

- ISBN:** 0730757277
- Series:** Australia 1:100 000 regolith geochemistry series. Explanatory notes.
- Contents:** Plate 1. Sample locations -- Plate 2. Regolith materials.
- Notes:** Map of Cornelia Range area on sheet entitled Nicholls.
Compilation date 2001.
Accompanied by booklet: Geochemical mapping of the Nicolls 1:100 000 sheet / by A.J. Sanders. Perth [W.A.] : Geological Survey of Western Australia, 2002 (Explanatory notes, 1:100 000 regolith geochemistry series, ISSN 1321-229X)

Category D: GPS products

GPS travel mapping requiring proprietary software, to be used with a GPS receiver to make use of tracking and other features.⁴ These products are comparatively rare so far, and few have been taken into the collection to date.

The Library has since 1999 accepted some GPS supported products into its collection.

Example:

- Record Id:** 26341998 (Australian Library Collections)
- Title:** Fraser Island [cartographic material] / Hema Maps ; cartography by StereoGraphics and Flat Earth Mapping Pty Ltd.
- Edition:** 3rd ed.
- Scale:** Scale 1:80,000 Universal transverse Mercator proj. (E 1525 0'--E 1532 5'/S 244 5'--S 255 5').
- Published:** Eight Mile Plains, Qld. : Hema Maps, c2004.
- Description:** 1 map : col. ; 98 x 48 cm., folded to 25 x 15 cm.
- ISBN:** 1865000442
- LC Call Number:** [G9002.F7P2 2004](#)
- Time Period:** d2004
- Map Data:** Scale 1:80,000 Universal transverse Mercator proj. (E 1525 0'--E 1532 5'/S 244 5'--S 255 5').

⁴ OziExplorer GPS Mapping Software, <http://www.ozieplorer.com/>

Series: [Regional map / Hema Maps](#)

Category E: Raster and Vector products

Raster base data and vector graphics CDs and DVDs comprise datasets, databases and files (eg ESRI shapefiles), and require customised viewing applications to display the data (sometimes included in the disk).

Geoscience's GEODATA TOPO 250K Series 3, is a vector representation of the major topographic features appearing on the [1:250 000 scale topographic maps](#). It is primarily designed to provide high quality data for mapping and GIS professionals, and is available in Personal Geodatabase, ArcView Shapefile or MapInfo TAB file formats. These packages are purchased as DVDs, or GIS Dataset Online Downloads, and use is subject to a licence.

Examples:

Record Id: 40586419 (Australian Library Collections: Titles)

Author: [Geoscience Australia](#).

Title: Geodata TOPO-250K series 3 [cartographic material] / Australian Government, Geoscience Australia.

Also Titled: TOPO-250K series 3

Scale: Scale 1:250,000 (E 154⁰⁰ -- E 112⁰⁰ /S 9⁰⁰ -- S 44⁰⁰ .

Published: Canberra : Geoscience Australia, 2006.

Description: 4 CD-ROMs : col. ; 4 3/4 in.

Time Period: d2006

Map Data: Scale 1:250,000 (E 154⁰⁰ -- E 112⁰⁰ /S 9⁰⁰ -- S 44⁰⁰ .

Technical details: System requirements: IBM PC or compatible ; CD-ROM drive

Contents: Disk 1 & 2. Personal Geodatabase format. Geocat #63999 -- TAB files format. Geocat #64059 --Shape files format. Geocat #64058.

DOIR's GeoVIEW.WA is an online browser-based visual tool for exploring GSWA's geoscience vectored datasets (updated monthly). This allows certified users to download datasets and construct geological maps and incorporate other mineral and petroleum exploration datasets using desired file format such as ESRI Shapefile, MapInfo TAB file or ESRI SDE Export.

Author: [Geological Survey of Western Australia.](#)

Title: *Western Capricorn* Orogen [cartographic material] / Geological Survey of *Western* Australia.

Edition: Nov. 2004 update

Scale: Scale 1:100,000 (E 11950/S 2356').

Publisher: East Perth, W.A. : Dept. of Industry and Resources, 2005.

Description: 1 DVD-ROMs : col. ; 4 3/4 in. + user guide.

Series: *Western* Australia 1:100,000 geological information series

Summary: Contains datasets on geology, mineralization and exploration, topography and georeferenced images.

The Murray darling Basin Commission (Australia) colour infrared orthophotography & natural resource data, provided on 11 computer laser optical disks, and utilising TerraScan Pro & ArcExplorer software.

Record Id: 21510184 (Australian Library Collections: Titles)

Author: [Murray-Darling Basin Commission \(Australia\)](#)

Title: River Murray mapping [electronic resource] : colour infrared orthophotography & natural resource data / [produced by Georeality for the Murray-Darling basin Commission].

Edition: 2nd ed.

Scale: Scale 1:25,000

Published: [Canberra] : The Commission, 1998.

Description: 306 maps : col. ; on 11 computer laser optical disks (4 3/4in.) + 1 booklet (28 p.) with CD 1.

Contents: CD 1 TerraScan Pro & ArcExplorer (software)

Overseas material examples includes various products prepared by and for the US Geological Survey, for example the Library has received several USGS Atlantic Coast Surficial Sediment Data releases, containing us SEABED data only usable within an ESRI environment (Environmental Systems Research institute Inc), and using GIS ArcView. Another example, the following geologic map of the Harpers Ferry National Historical Park, is intended for use with a licensed copy of ArcView.

Staff paper

Record ID: 53260

Title: Digital geologic map of the Harpers Ferry National Historical Park [electronic resource] / by Scott Southworth ... [et al.].

Publisher: [Reston, Va.] : U.S. Dept. of the Interior, U.S. Geological Survey, 2000.

Description: 1 computer optical disc ; 4 3/4 in.

Series: U.S. Geological Survey open-file report ; 00-297.

Technical details: System requirements: Intended for use with Windows 95/98/NT or UNIX computers; a licensed copy of ArcView 3.1 or higher is needed to enable the full functionality of the product in a Windows system; ArcExplorer and Adobe Acrobat Reader is provided on the CD for other Windows 95/98/NT users; ArcInfo export files for UNIX/NT workstations were created in AcrInfo v. 7.1.1.

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