



CSIRO

Snapshot

www.csiro.au



CSIRO's purpose

By igniting the creative spirit of our people, we deliver great science and innovative solutions for industry, society and the environment.

Table of contents

	Page
Your CSIRO	1
Some facts	3
Our strategy	6
How we do business	9
CSIRO globally	10
What we do	11
Organisational structure	12
CSIRO's divisions	13
Locations	18
More information	22



Your CSIRO

Australia is founding its future on science and innovation.

Its national science agency, CSIRO, is a powerhouse of ideas, technologies and skills for building prosperity, growth, health and sustainability. It serves governments, industries, business and communities across the nation.

Over 6 500 staff in 21 research Divisions located across 57 sites throughout Australia and overseas, carry out research and development in fields of economic, social and environmental importance. These include:

- agriculture
- communications and information technology
- health
- manufacturing and construction
- minerals and energy
- services
- the environment
- transport and infrastructure.

Australians in the 21st Century aspire to healthy lifestyles and environments, knowledge they can use, better jobs and competitive industries. CSIRO has taken this challenge to heart. We listen carefully to what our customers and other stakeholders tell us, we study global trends, we seek the most suitable partners and then focus the best scientific skills and facilities on the issues. We are committed to seeing our science pay off for Australians and our industries.

CSIRO's rich history shapes our future direction. The Organisation's vision, mission and core beliefs have been built up over the last 77 years and flow through everything we do. At the same time in response to some important challenges now facing Australia, we have embarked upon a new era at CSIRO. Only our unrelenting focus on improving the quality of our science and the impact of our outputs will ensure our relevance for years to come. We are reinventing ourselves as a research enterprise with global reach. We demand of ourselves science excellence, business excellence and operational excellence.



CSIRO's strength lies in building expert teams to tackle complex problems. We have the breadth, skills, diversity, infrastructure, perspective and partners to deliver research outcomes of truly national significance and impact. We support a 'Team Australia' approach to help the nation punch above its weight in the global competitiveness contest.

This *Snapshot* booklet is a brief guide to CSIRO. It outlines our goals, our Organisation, business units and some facts. Examples of our scientific achievements can be found in our *Creative Solutions* report and our strategic plan, scientific investment and recent activities are detailed in our *Annual Report*.

I hope *Snapshot* conveys to you a sense of the enthusiasm, energy, commitment and strategic vision with which we are helping to build Australia's knowledge base for sustainable success in the 21st Century.

Geoff Garrett
Chief Executive



Some facts

Research and outputs

- CSIRO ranks in the top one per cent of world scientific institutions in 12 of 22 research fields (based on Institute for Scientific Information data on total citations of publications, as at 30 June 2004). Worldwide, it ranks sixth in plant and animal science and agricultural science and eighth for environment and ecology
- CSIRO transfers know-how through over 3 000 scientific publications, over 8 000 client reports, and around 230 media releases annually, plus secondments, industry workshops, seminars and specialist publications
- CSIRO is the largest single participant in the Cooperative Research Centre (CRC) Program (core participant in 50 of the 71 centres, as at 30 June 2004)
- worldwide, CSIRO is involved in over 850 current or recently completed research activities, working with leading scientific organisations and firms in the United States, Japan and Europe, and with developing countries, especially in Asia
- CSIRO offers more than 50 specialised technical and analytical services. These include analyses for air pollutants and satellite imaging of natural resources through to fire testing of materials and calibration of standards
- CSIRO is Australia's leading patenting enterprise, holding over 3 900 granted or pending patents
- more than 80 spin-off companies are based on CSIRO generated intellectual property and expertise.



National facilities

- CSIRO hosts three major National Research Facilities (the Australian Animal Health Laboratory, the Australia Telescope, the Oceanographic Research Vessel *Southern Surveyor*) and over 30 other research facilities such as the Riverside Life Sciences Centre, CSIRO Discovery Centre and the Australian Resources Research Centre
- CSIRO manages 11 national reference collections including: the Australian National Fish Collection, the Australian National Insect Collection, the Australian National Herbarium, the Australian National Wildlife Collection, the National Tree Seed Collection and the Scientific Marine Data Collection.

Budget (as at June 2004)

- total revenue per annum now exceeds \$900 million
- in 2003/04 CSIRO received Parliamentary appropriation funding of \$568 million
- over 70 per cent of CSIRO's Parliamentary appropriation funding is directed towards the priority goals associated with the National Research Priorities
- CSIRO generated \$320 million annually in external earnings for research, specialised consultancy and other services. This revenue was derived from the Australian private sector, Federal and State governments, the Rural Industry R&D Corporations and international companies and organisations.

Our staff

- as at November 2004, CSIRO has over 6 500 staff located across 57 sites throughout Australia and overseas
- sixty per cent of staff hold university degrees, including more than 1 850 doctorates and 420 masters
- in collaboration with university colleagues, our staff supervise or co-supervise more than 550 postgraduate research students annually, over 20 per cent in collaboration with CRCs.



Science communication and education

- stories involving CSIRO science are reported in around 12 000 news or feature items every year in print, radio and television and involve Australian and international media
- CSIRO Enquiries, our central telephone and email contact point, handles over 40 000 enquiries a year (1300 363 400, enquiries@csiro.au)
- CSIRO Education involves over 700 000 students, parents and teachers each year in activities that encourage appreciation of science. CSIRO jointly produces the *Totally Wild* science TV program, which has a viewing audience of over 400 000 each week. There are nine CSIRO Science Education Centres across the nation that provide hands-on classes for more than 220 000 students. These workshops are both in the Centres, and through each Centre's *Lab on Legs* travelling program operating throughout Australia. CSIRO's Double Helix Science Club offers two magazines – *The Helix* (circulation 13 000) and *Scientriffic* (circulation 12 000), as well as events and activities for members. We also offer a range of other programs for students and teachers
- the Discovery centre in Canberra is CSIRO's showcase. Visitors can explore an interactive exhibition or make use of the modern function facilities. Discovery's education program gives children a chance to explore real research issues in a scientific setting complete with working laboratories
- CSIRO PUBLISHING produces books and CD-ROMS as well as journals in partnership with the Australian Academy of Science and other scientific societies.



Our strategy

Over the next decade we will take on, through our Flagship initiative, the biggest and most challenging issues facing the nation. We will help advance the pace of commercialisation. Through vibrant partnerships with effective knowledge transfer to industry and communities we will help drive business activity, exports and social benefits. And through unremitting excellence in both science and in the business of doing science, we will remain one of the world's pre-eminent science organisations.

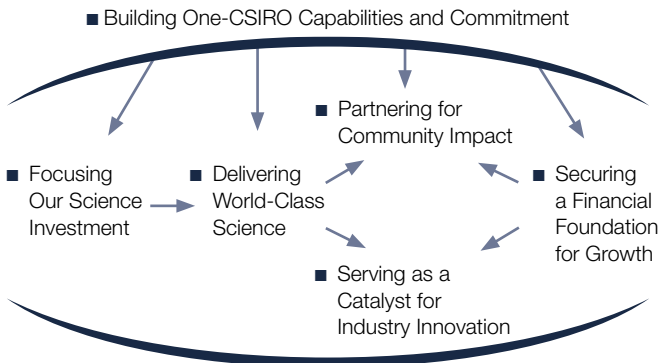
Through science and imagination our people will help create the sort of place for Australia that Australians want – a source of innovative, sustainable solutions, ideas and technologies to the world, booming knowledge exports, industrial and environmental innovation and rejuvenation, new jobs, new industries and fresh opportunities.

Our strategy for the next decade is based upon six key messages: **greater focus** on major scientific challenges and opportunities for Australia with a strong **outward-looking** emphasis, **stronger partnerships** with universities, other science agencies and industry with a '**service from science**' culture, a **unified One-CSIRO**, making full use of our collective strengths and **growing our impact and relevance** in service to the nation.

We are on a journey from being an Australian research institution to a research enterprise with global reach. The journey builds on our rich history and represents a long-term commitment. The period 2004/07 will focus on **delivery** and **execution** realising many of the aspirations and commitments we have made over the previous three years.



From the six key messages come our strategic goals for 2004/07:



Strategy in action

CSIRO's research will be focused and delivered in three major areas:

- Priority-driven core research
- National Research Flagships
- The Emerging Science Initiative.

Priority-driven core research

Our Priority-driven core research delivers world-class science outcomes across our core science capability. It includes a number of major cross-Divisional activities, including Climate, Secure Australia and Information and Communications Technology. We will continue to focus and build critical mass in areas of national significance.

National Research Flagships

The National Research Flagships are a strategic initiative that aim to make a sustained contribution to national economic and social growth and sustainability. Flagships are founded on our 'Team Australia'



philosophy. They will focus and harness our world-class science through partnerships to deliver impact to Australian industry and society, thus clearly delivering against all six of our strategic goals.

The Flagships, Energy Transformed, Food Futures, Light Metals, Preventative Health, Water for a Healthy Country and Wealth from Oceans, are closely aligned to the National Research Priorities and will deliver scientific solutions to advance six of Australia's most pressing national objectives:

- strong, sustained economic growth, new industries, competitive enterprises and quality jobs
- healthier, more productive lives for Australians
- clean, cost-efficient energy
- more productive and sustainable use of water
- sustainable wealth from our oceans
- growth and prosperity for regional Australia.

CSIRO has reallocated significant internal resources to increase the scale and viability of Flagships. By 2007/08 we will be allocating at least 30 per cent of our total resources to Flagship Programs.

The Flagships are partnerships of leading Australian scientists, research institutions, commercial companies, CSIRO and selected international partners.

The Emerging Science Initiative

The Emerging Science Initiative (ESI) is working at the cutting-edge of technologies for the future in areas of frontier research that will be absolutely vital to our future prosperity. It will be these technologies that will underpin our long-term portfolio of skills and capabilities in emerging areas of critical science.

The current focus of the ESI is on innovative information and communications technologies; socio-economic integration; nanotechnology; novel biotechnologies and complex systems science.

The ESI will focus our science investment and promote cross-pollination between CSIRO Divisions for the synergy required to achieve these breakthrough science goals.



ESIs will play an important role in enhancing CSIRO's reputation for scientific excellence and in strengthening our links with international science.

Sectors – links to industry

We plan our research and set priorities in consultation with Sector Advisory Councils (SACs) who represent industry and other stakeholder interests.

These Councils cover agribusiness; energy and transport; health; information, communication and services; manufacturing; mineral resources; and environment and natural resource management.

How we do business

CSIRO has found that the most productive developments come from close working relationships based on mutual understanding. We aim to meet business and technological needs. We strive to deliver value from the investment, at all stages of research, development and commercialisation. We work with large and small, public and private companies. We provide a range of partnering and technology transfer arrangements, all of which can be tailored to suit the requirements of individual organisations. These include:

- collaborative research agreements
- contract research
- consultancy and specialised testing services
- commercial licensing arrangements.

CSIRO's Client Service Teams have been established to manage our relationships with key customers and ensure they are able to identify and leverage the full scope of CSIRO's diverse skill base and leading edge research.

Client Service Teams provide a single point of entry into CSIRO, providing seamless access to CSIRO's wide range of capabilities and ensuring that relevant expertise and experience is available to our clients.



CSIRO globally

CSIRO has worked in more than 85 countries with partners and customers ranging from foreign governments, to Fortune 500 companies, aid agencies and international foundations.

Consistent with the Australian Government's aid and trade objectives, CSIRO has created a number of internationally focused programs including:

- **CSIRO Global Development:** through partnerships with international and in-the-field agencies, CSIRO Global Development focuses on multi-disciplinary expertise to develop high impact and sustainable solutions to the world's most pressing problems
- **CSIRO Global Business:** CSIRO partners with a number of countries at a national level, working across government, commercial and aid sectors, to jointly address sustainable industrial development and to solve major problems that can arise when growth is very rapid
- **Global Research Alliance:** CSIRO has joined with eight other leading international science organisations to leverage our combined capabilities to target the United Nation's Millennium Goals in water, energy, health, transport and the digital divide.



What we do – is deliver benefits to the economy, society and the environment

We strive to deliver value to our clients at all stages of research, development and commercialisation. By ensuring that our science is relevant and has impact, we expect our partnerships and capacity to invest in new research, to grow.

The outputs which we provide to our stakeholders include:

- new/improved technology and management systems
- new/improved intermediate and final products
- ‘catalyst’ services and advice for policy development and business
- new knowledge and skills.

These in turn contribute to outcomes which centre around building/sustaining:

- innovative and competitive industries
- a technologically advanced society
- healthy environments and lifestyles.

This is achieved by delivering a range of public and private benefits across the ‘triple bottom line’ of economic, social and environmental benefits, for example:

- lower/more competitive production costs
- improved quality of goods and services
- new products, services and businesses
- reduced risk
- skills developed (enhanced human capital)
- improved human health, safety and wellbeing
- informing policy (cost-effective public programs)
- reduced pollution
- improved environmental health.



CSIRO – organisational structure

MINISTER

Education, Science and Training – The Hon Dr Brendan Nelson MP



CSIRO Board

Ms Catherine Livingstone (Chairman)
 Professor Suzanne Cory – Dr Terry Cutler – Mr Peter Duncan
 Dr Geoff Garrett – Mr Brian Keane – Ms Deborah O’Toole
 Ms Lisa Paul – Professor Alan Robson – Dr Ed Tweddell



EXECUTIVE TEAM

Dr Geoff Garrett – Mr Mehrdad Baghai – Dr Michael Barber
 Dr Michael Eyles – Dr Rod Hill – Dr Warren King – Mr Peter May
 Dr Steve Morton – Dr Ron Sandland – Ms Donna Staunton
 Mr Mike Whelan



EXECUTIVE MANAGEMENT COUNCIL¹



AGRIBUSINESS & HEALTH	INFORMATION TECHNOLOGY, MANUFACTURING & SERVICES
Food Science Australia ²	Australia Telescope National Facility
Forestry & Forest Products	ICT Centre
Health Sciences & Nutrition	Industrial Physics ³
Livestock Industries	Manufacturing & Infrastructure Technology
Plant Industry	Mathematical & Information Sciences
	Molecular Science
	Textile & Fibre Technologies
ENVIRONMENT & NATURAL RESOURCES	SUSTAINABLE MINERALS & ENERGY GROUP
Atmospheric Research	Energy Technology
Entomology	Exploration & Mining
Land & Water	Minerals
Marine Research	Petroleum Resources
Sustainable Ecosystems	
FLAGSHIP PROGRAMS	CSIRO-WIDE SUPPORT
Energy Transformed	Business Development & Commercialisation
Food Futures	Communications
Light Metals	Corporate Operations
Preventative Health	People & Culture
Water for a Healthy Country	Science Planning
Wealth from Oceans	

¹ The Executive Management Council comprises members of the Executive Team, all Divisional Chiefs, Flagship Directors and a number of other Senior Managers.

² Joint venture with the Victorian Government.

³ Formerly Telecommunications & Industrial Physics.



CSIRO's Divisions

Agribusiness and Health

Food Science Australia's* researchers use specialised facilities to develop innovative food processes and safe, value-added products. A multi-disciplinary team of skilled people are committed to help make Australian food companies among the most competitive in the world.

 **339**  **\$36M**
**joint venture with the Victorian Government*

Forestry and Forest Products' research improves the management and productivity of the nation's forests and the quality and value of forest products.

 **139**  **\$21M**

Health Sciences and Nutrition's research improves human well-being and community health while enhancing the competitiveness of the Australian food, pharmaceutical and medical diagnostics industries.

 **186**  **\$28M**

Livestock Industries develop technologies for novel products, improved production efficiency, disease control and product quality for the livestock industries. (revenue figure includes the Australian Animal Health Laboratory)

 **495**  **\$81M**

Plant Industry applies strategic research in the plant sciences to make Australia's agrifood, fibre and horticultural industries more profitable and sustainable, to develop novel plant products and improve natural resource management.

 **685**  **\$89M**



Environment and Natural Resources

Atmospheric Research conducts research into climate and weather, air quality and health, and atmospheric observations. It provides world-class scientific advice and solutions on issues such as air pollution, climate change and variability, ozone depletion, and wind resources.

 144  \$24M

Entomology generates economic, social and environmental benefits for all Australians through its research into insects and their management. It achieves this in partnership with industry and the community.

 245  \$37M

Land and Water seeks to develop innovative solutions to Australia's land and water management challenges, with the aim of delivering options to policy makers and land managers that are economically viable, socially acceptable and environmentally sustainable.

 517  \$63M

Marine Research provides scientific knowledge for the use and conservation of marine resources to enable development of Australia's oceans, seas, estuaries and dependent industries.

 379  \$49M

Sustainable Ecosystems strives for ecosystems that support healthy rural, regional and urban communities, landscapes that sustain viable enterprises and management that allows biodiversity to prosper.

 350  \$45M



Information Technology, Manufacturing and Services

Australia Telescope National Facility operates world-class radio telescopes (available to Australian and international researchers) to support research in radio astronomy, one of the major fields of modern astronomy.

 171  \$32M

The **ICT Centre** contributes to powering Australia to compete in global Information and Communications Technology innovation, applying research results to challenges across all industry sectors, both internationally and in Australia.

 197  \$43M

Industrial Physics develops technologies to increase the competitiveness of the telecommunications, security, medical, manufacturing, mining and energy industries.

 180  \$27M

Manufacturing and Infrastructure Technology works with Australian and global manufacturing and infrastructure industries to develop and commercialise innovative materials, processes, and products. Specialised laboratory and testing facilities provide research and consulting and testing services to international standards.

 462  \$81M

Mathematical and Information Sciences performs leading-edge research in quantitative and computational disciplines to create innovative models and analytical methods, products and services to have an impact on industries where information is critical.

 154  \$23M

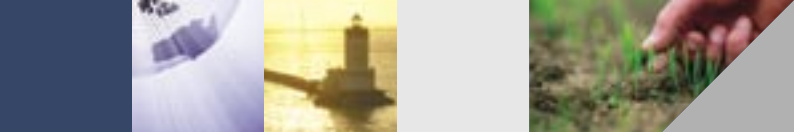


Molecular Science assists the development of a range of industries including chemicals, plastics, pharmaceutical and human health, through the application of expertise in chemical and biological sciences.

 **190**  **\$35M**

Textile and Fibre Technology focuses its research and development activities on wool, cotton, advanced materials, technical textiles and non-wovens. This research targets the needs of local and global manufactures of textile products, providing customised and total solutions.

 **172**  **\$25M**



Sustainable Minerals and Energy

Energy Technology provides R&D contributing to the sustainability of Australia's energy industry, including its energy exports.

 **143**  **\$29M**

Exploration and Mining is creating sustainable value from Australia's minerals resources through increased exploration success and a sustainable and vibrant mining industry.


 **211**  **\$35M**

Minerals works strategically with companies in the minerals processing and metal production industries. In partnership, it boosts productivity and adds significant value to business whilst conserving the environment.

 **281**  **\$47M**

Petroleum Resources conducts research to improve exploration success, understand and manage petroleum reservoirs and to increase the efficiency of company operations. Future issues and challenges, including gas-to-liquids, geothermal energy, the hydrogen economy and reducing environmental impacts are also research areas of significant priority.

 **122**  **\$22M**

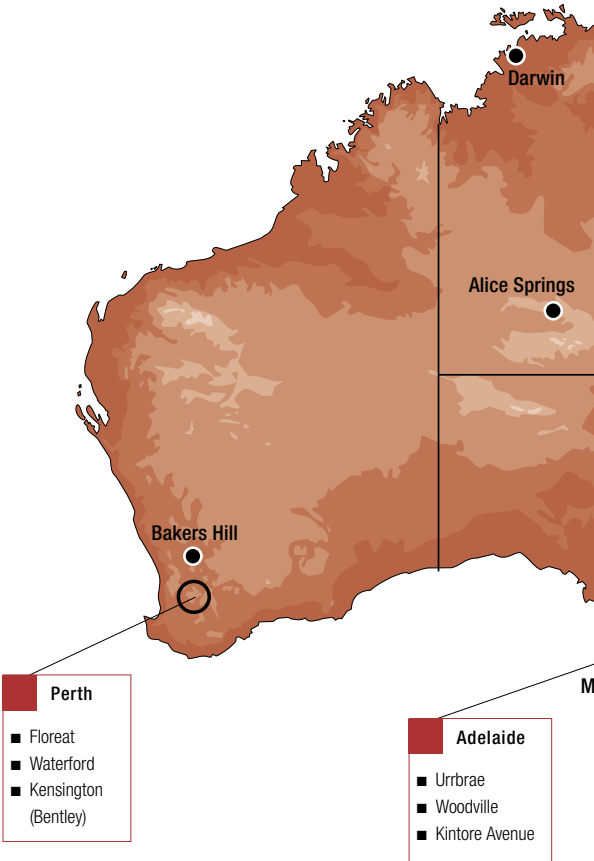
Key  **staff numbers**
as at September 2004

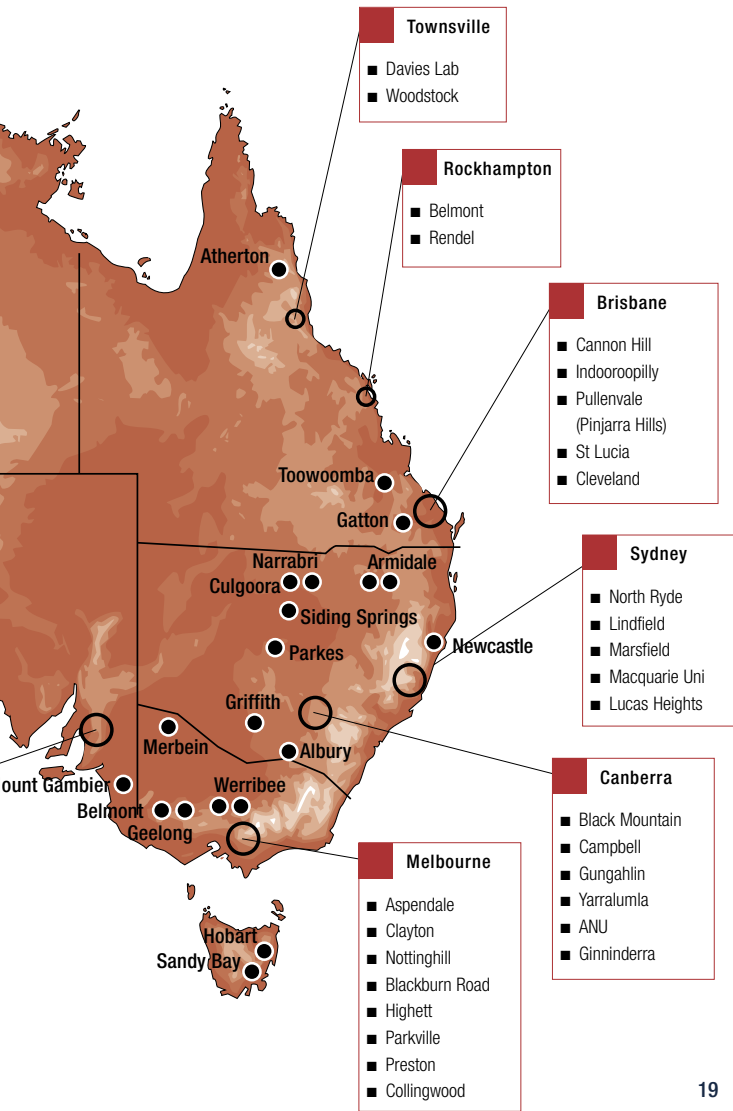
\$ total budgeted
revenue for 2004/05

Notes: Figures shown above exclude 701 staff in corporate support roles. Total CSIRO revenue is about \$922.7 million. Figures shown above exclude \$23 million for property, rental, profit on sale of assets and other minor revenue.



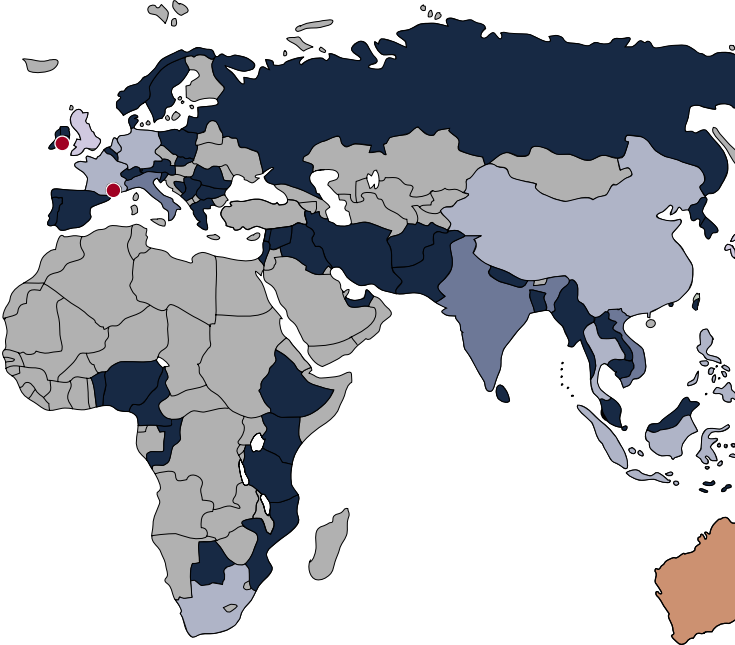
CSIRO locations



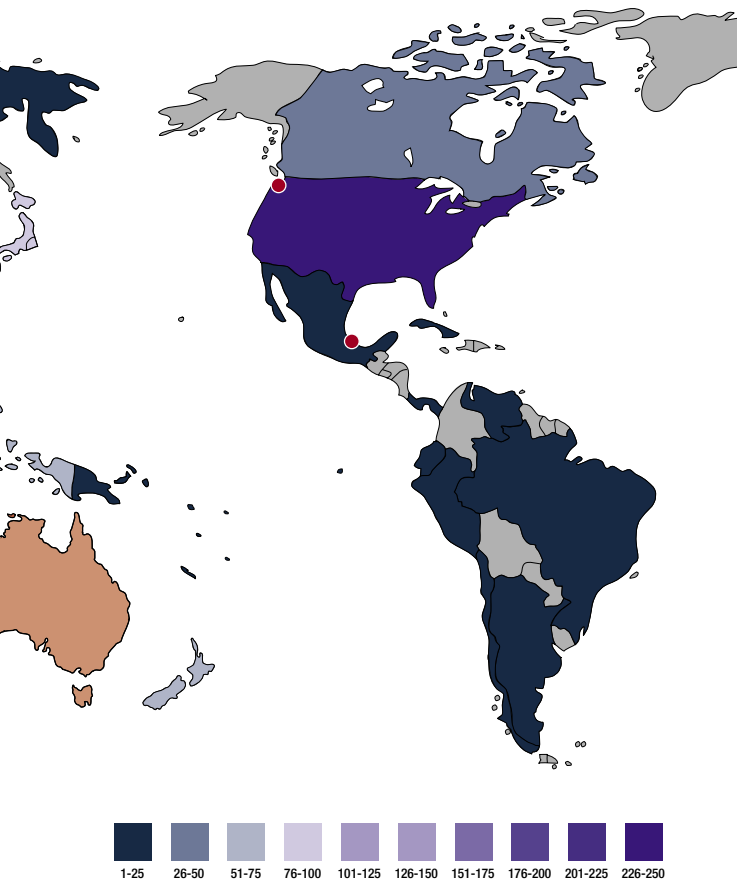




CSIRO international activities



● Locations of CSIRO staff.



Number of formal international CSIRO activities, current or recent, by country.



More information

More details can be found in CSIRO's:

- *2003/04 Annual Report*, describing our Strategic Plan, scientific investment and recent activities
- *Creative Solutions* which highlights some of our most significant research outcomes and achievements.

Copies can be obtained from:

Mrs Angela Troy
CSIRO Corporate Brand and Marketing
PO Box 225
Dickson ACT 2602
T (02) 6276 6639
F (02) 6276 6273

or can be downloaded from our website at www.csiro.au

To learn more about the CSIRO and its activities, please visit our website or phone CSIRO Enquiries on **1300 363 400** or internationally on **+61 3 9545 2176**.



General Enquiries

Tel 1300 363 400
International +61 3 9545 2176
Email enquiries@csiro.au
Web www.csiro.au

ISBN 0 643 06795 7