

AGRICULTURE AND FISHERIES DIVISION



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Nature and scope of activities

The Agriculture and Fisheries Division has diverse responsibilities. Foremost among these are delivering advisory services and production solutions for agriculture, and managing sustainable commercial and recreational use of NSW fisheries resources. Total agricultural, wildcatch fisheries and aquaculture production in NSW is worth approximately \$8.2 billion per year.

The Division's six branches are:

- the Primary Industries Export Branch (PRIMEX) which aims to identify and open up export opportunities for NSW agricultural and fishery industries, particularly in Asia, India and the Middle East
- the Extensive Industries Development Branch which works with broadacre, pastoral and private forestry industry managers across NSW to advance the sustainable development of a profitable farming sector
- the Intensive Industries Development Branch which uses its skills in production and supply chain management in working with intensive livestock, horticulture, viticulture, cotton and rice industries. The branch, together with the Extensive Industries Development Branch, collaborates with other NSW DPI divisions on strategic development of agricultural industries
- the Fisheries Management Branch – responsible for commercial fisheries, aquaculture, aquatic conservation, habitat protection and rehabilitation, and recreational fishing
- the Regional Relations and Education Branch which aims to improve NSW DPI services by developing productive relationships with regional organisations and by enhancing the Department's profile. The branch delivers accredited training to school leavers, farmers, farm advisors and agribusiness through PROfarm courses
- Animal Welfare which promotes the welfare of animals, striking a balance between community and market expectations and the economic feasibility of the industries involved.

Major outcomes achieved

2004-05 was a year of significant achievement for the Agriculture and Fisheries Division, marking our emergence as an effective service provider to the agriculture, fisheries and private forestry industries of NSW.

As NSW DPI's principal contact with these industries, the Division initiated close working relationships with the Science and Research, Biosecurity, Compliance and Mine Safety and

Primary Industries Trading divisions to promote delivery of an integrated service to stakeholders.

Also to this end, the Division liaised with key industry representatives to develop the Strategic Plan for Industry Development and Extension Services. The plan will guide the Division's activities by ensuring that resources are allocated to programs aligned both with industry directions and with government policy for achieving economic and environmental sustainability.

Holistic approach to drought support

The most significant issue impacting on the NSW beef and sheep industry in 2004-05 was continuing drought conditions. Every district in NSW was affected by the worst drought in a century and, at 30 June 2005, 89 per cent of the State was drought declared.

Direct support from the NSW Government during 2004-05 included \$6 million in exceptional circumstances interest rate subsidies and more than \$18.5 million in transport subsidies for stock, water and fodder.

At the frontline, NSW DPI officers disseminated technical feeding and management information and conducted drought activities attended by more than 10 000 producers. Over the course of the year, officers handled up to 30 telephone enquiries per day, many relating to optimal stock feeding and sale strategies.

Two important sources of advice to NSW producers were our *Drought Survival Guide* and *Drought Recovery Guide* booklets. Both publications were available in hard copy – 45 000 copies were distributed – and on the Department's website.

Plague locusts compounded the impact of the drought on crops and pastures throughout the tablelands, slopes and plains of NSW. The Division's staff responded with technical advice to producers and devoted over 1311 person-days to assist the Biosecurity, Compliance and Mine Safety Division in the control program.

Staff also played a major role in preparing and assisting producers in the worst affected areas within NSW to apply for Commonwealth exceptional circumstances relief. (The section in this report on the Strategy, Policy and Communications Division has details.)

Social support for drought-affected farmers and communities has proved to be as important as technical information on managing a business during drought. In January 2003 the Division's drought support workers began to link farmers to the welfare services offered by community and government agencies to farm families in drought. Due to the ongoing drought and high demand, by June 2005 a team of 10 drought support workers were stationed throughout NSW. They organised farm family gatherings and drought support workshops that reached a total of more than 27 000 farmers.

Agriculture

National Livestock Identification System

NSW DPI worked with all sectors of the NSW cattle industry to successfully implement the National Livestock Identification System (NLIS) – the most significant advance in stock identification and tracing ever introduced to the Australian cattle industry. In the first phase of the program, we sought support and compliance from over 81 000 producers (the largest number in Australia), 57 saleyards, 26 abattoirs, and more than 300 stock and station agents across the State.

Designed to allow electronic tracing of the nation's cattle herd, the NLIS will limit the losses incurred should an exotic disease outbreak or chemical residue case affect the \$4 billion NSW cattle industry. Implementation commenced in NSW on 1 July 2004 with the requirement to identify all stock born after that date. It is being underwritten by \$5.4 million in NSW government funding over three years.

In 2004-05, divisional staff conducted NLIS educational activities attended by more than 14 000 people and organised several tours to Victoria for saleyard and agent staff to observe NLIS in action. They also staffed an NLIS hotline, handling over 400 calls per month.

By the end of June 2005, 27 000 producers had purchased over four million identification devices and Property Identification Code cards had been issued to more than 81 000 properties across NSW (including sheep properties). The cards will be a ready reference for producers when buying and selling cattle.

The major phase of the NLIS program will begin in July 2005 when all stock leaving a property are required to have a NLIS device for reading at saleyards and abattoirs.

Better stock handling in the beef industry

After several serious accidents in saleyards and on farms, the NSW DPI beef extension team and the Saleyard Operators Association identified the need for training to help improve beef livestock handling. The two-day training program and manual developed cover occupational health and safety, animal behaviour and handling, animal welfare and meat quality.

The training package, designed for agents, saleyard staff, stock carriers, abattoir staff, producers and students was subsequently delivered in both NSW and Victoria.

Promoting beef research uptake

The Division led uptake of research from the national Cooperative Research Centre – Cattle and Beef Quality by interpreting the results, packaging these into practical production chain management systems, and delivering information to the NSW and Australian beef industries. Promotions included:

- publishing two booklets and two CDs summarising much of the Centre's 14-year research and distributing these nationwide

- running research and development 'distillation workshops' attended by over 200 scientists and extension specialists. The workshops will have a major impact on adoption of the valuable technology developed by the Centre
- conducting extension events to present the research to more than 5000 NSW beef producers.

Educating livestock producers

In partnership with peak body Meat and Livestock Australia (MLA), the Division presented the MLA's More Beef from Pastures training program. The 1200 plus producers who attended training developed skills in pasture production and utilisation, beef cattle genetics, farm management and beef marketing.

Also in association with MLA, the Division produced the workshop, Wean More Lambs, along with a related publication. By helping producers improve flock reproductive rates, the package will enable them to profit from forecast increases in lamb and sheepmeat exports over the coming years.

A clean approach to pesticide residues

NSW government agencies have monitored pesticide residues in NSW fresh fruit and vegetables since 1988, with results obtained comparable with international standards. A new initiative, CleanFresh, will now take monitoring a step further by linking on-farm practice to residue results with the aim of achieving improved compliance through the optimal use of pesticides.

Backed by a \$1.47 million government investment over three years, CleanFresh will obtain expanded information through continued surveys of randomly selected produce at Sydney markets combined with grower surveys. NSW DPI will also increase its residue testing capabilities under the CleanFresh program and conduct a wider range of tests to assist growers in meeting quality assurance requirements.

Retaining good agricultural land

Rapid population growth on the North Coast of NSW over the past decade has increased pressure for subdivision of good agricultural land for other purposes. The increasing fragmentation of agricultural land prompted a cooperative initiative to develop a new model for agricultural land protection, the Farmland Protection Project. Those involved were NSW DPI, the Department of Infrastructure, Planning and Natural Resources, the Northern Rivers Catchment Management Authority and the local community.

The Farmland Protection Project was piloted in the Northern Rivers region over the last three years and concluded in early 2005. It identified and mapped agricultural lands of state and regional significance which will be protected from further residential development. The mapping, which should inform future settlement plans, pinpointed the need to develop strategies for managing potential conflicts between agricultural and residential land uses at the urban/rural interface.

Cutting water consumption by intensive plant industries

NSW intensive plant industries include cotton, rice, horticulture and viticulture. All depend on irrigation.

In response to the drought and reduced water allocations, the Division developed a range of programs to assist farmers maximise farm profitability while minimising water use.

Rice farmers were advised to integrate rice farming with winter cropping, using soil moisture levels from rice for cereal production through direct drilling.

In the horticulture and viticulture industries, the Division assisted farmers in accurately measuring water use and installing low water use irrigation systems. And, in the cotton industry, the Division distributed copies of the *WATERpak* to 1100 growers and consultants. The *WATERpak*, which details methods for improved water efficiency, will help the cotton industry to meet the targeted 15 per cent reduction in water use over the next five years.

Guidelines for greenhouse horticulture

The greenhouse industry, one of the fastest growing horticulture sectors in NSW, is estimated to be worth \$500 million annually at farm gate.

With industry growth, a planning issue has arisen as growers in urban areas switch to using protected structures for vegetable and flower production to reduce the risk of crop loss. Many local government areas, however, have different planning requirements – an anomaly that leads to inconsistencies in development approval between adjoining council areas.

The Division produced a new booklet, *Guidelines for the Development of Greenhouse Horticulture* to bring uniformity to local government planning processes. The booklet discusses topics such as buffer zones, waste water and nutrient control off-farm, and visible aesthetics and presents a common set of planning recommendations.

Supporting intensive animal industries

The intensive animal industries of poultry, pork and dairy are Australia's largest feed grain consumers. Due to the combined impact of increased grain feed prices under the current drought and static commodity prices, these industries are facing declining profitability.

In response, the Division developed programs such as Milk Business, a decision support aid and business analysis tool. Sixty per cent of NSW dairy farmers have now been trained to use this tool. We also released software that will allow pork producers to analyse their profitability, taking into account increasing feed costs.

Another business analysis tool, Honey Money, will help NSW beekeepers to assess their profitability in the face of low production during drought and competition from cheap imported honey products.

Better crops

Responding to a serious outbreak of stripe rust in wheat in 2003-04, NSW DPI's crop agronomists initiated a major extension campaign on management of the disease to prepare for the 2004-05 crop. As part of the campaign we distributed a new NSW DPI publication, *Stripe Rust - Understanding the disease in wheat*. The Grains Research and Development Corporation (GRDC) also distributed the publication nationally with the premier grains newspaper *Ground Cover*.

NSW DPI economic research in 2004 clearly demonstrated the cost benefits of conservation farming (reduced or nil cultivation prior to crop sowing) in northern NSW. As only about 20 per cent of farmers have adopted conservation farming, crop agronomists conducted 20 focus group meetings to identify the barriers to adoption of no-tillage systems. The issue featured on ABC TV's Landline program in June 2005 and will be the subject of a major industry conference in 2005-06.

The Division was successful in winning a tender to undertake GRDC funded national variety testing of cereals and pulses throughout NSW. The testing will give all farmers objective comparative data on the relative performance of all new varieties released on the market. Producers view this information as critical as plant breeding in Australia has largely been privatised, leading to increased commercial competition and the release of lines about which farmers have little reliable information.

Agricultural education expands

Murrumbidgee College of Agriculture continued expansion of its short course program. Despite the severe drought in the surrounding region, the program over-performed by more than 100 per cent against such measures as the numbers of courses offered, days of training, participants serviced and number of towns and localities serviced.

The College's Aboriginal Rural Training Program provides vocational education and training opportunities for Indigenous Australians from lands councils, schools, juvenile justice facilities, correctional institutions and community development employment programs. In 2004-05 members from over 20 different Aboriginal communities in NSW, Queensland and South Australia were involved in the program.

Enrolments in Tocal College's full-time residential certificate and diploma courses in 2005 were the highest in 13 years. There was record demand by employers for college graduates with all last year's students finding suitable positions or continuing their studies at university.

Fisheries

Aquaculture

NSW aquaculture received a boost in 2004-05 from divisional assistance and initiatives such as:

- facilitating Ministerial approval for the extension of mussel farming in Twofold Bay. The results will be an increase in the aquaculture lease area from 15.5 to 49.5 hectares and improved local employment opportunities
- assisting the oyster industry to commercialise a disease-resistant and faster-growing Sydney Rock oyster through forming a private company for this purpose
- achieving the approval of the Minister for Planning and the Minister for Primary Industries for the Hunter and Central Coast Aquaculture Strategy in June 2005. This forms part of the statewide program of regional aquaculture strategies under SEPP 62.

The Division worked with the NSW Premier's Department to coordinate an interagency meeting in April 2005 to consider assistance for oyster farmers affected by the outbreak of QX disease in the Hawkesbury. We subsequently established a QX taskforce to assist industry restructure, clean-up, biosecurity and social welfare issues.

Commercial fishing

Implementation of the share management scheme for commercial fishers progressed with the allocation of provisional shares in all the major commercial fisheries – ocean trap and line, ocean haul, ocean trawl, estuary general and estuary prawn trawl. Shares have already been allocated for the abalone and rock lobster fisheries.

Habitat protection and rehabilitation

Fish will be able to move freely along 606 kilometres of estuarine creeks due to active management of 57 floodgates by the Division in conjunction with the Clarence Valley, Kempsey and Richmond River councils. As an additional benefit, the floodgate projects will significantly reduce acid sulfate levels.

In the NSW high country, the Division began public consultation on the draft native fish recovery strategy for the Snowy River that complements recovery works associated the commencement of the river's environmental flows.

Marine parks

NSW DPI is responsible for managing marine parks together with the NSW Department of Environment and Conservation and the Premier's Department.

The Final Zoning Plan for Lord Howe Island Marine Park was implemented on 1 December 2004 as part of the NSW Government's commitment to developing a comprehensive system of marine parks in NSW. A detailed user's guide on the zoning plan was also released.

The public consultation process for the Cape Byron Marine Park Draft Zoning Plan was also completed. The final zoning plan should be completed during 2005-06. Over \$4 million has been allocated for the buy-back of commercial fishers affected by the zoning plan.

Bioregional assessments

Bioregional assessments use scientific and ecological criteria to ascertain conservation values and are the basis for selecting candidate marine protected area sites. The program of systematic ecological evaluation of the five NSW marine and coastal bioregions is now complete, with the remaining bioregional reports to be released during 2005-06.

Fish stocking for recreational fishers

Following a comprehensive environmental impact assessment process by the Division, approval was gazetted in May 2005 to allow freshwater fish stocking in natural waterways by NSW DPI staff and the public.

Relationships with catchment management authorities

The Division took the lead for NSW DPI in establishing an excellent relationship with all NSW catchment management authorities during their formative year. Among notable achievements were:

- development and publication of best management guidelines for landholders to improve soil health, ground cover, water quality, erosion and weed control and grazing management
- the piloting of NSW DPI's LANDSCAN landscape management course throughout the Hawkesbury-Upper Nepean, Murrumbidgee and Southern Rivers catchment management authority areas.

In another initiative which targeted catchment management authority staff as well as agribusiness and private consultants, the Division developed and delivered training and reference material to support effective salinity management. The multiplier effect of this training has resulted in key messages on salinity management being passed on to an estimated 3000 farmers.

Water reform

Evaluation of projects funded under the NSW Government's Water Reform Initiative demonstrated that better irrigation management can substantially improve both farm business profitability and the environment. On the North Coast, demonstrations in commercial orchards showed that improved irrigation scheduling based on soil water monitoring could improve financial returns from stone fruit by 38 per cent while reducing water use by 28 per cent.

The results of another water reform project are detailed in the case study on page 13.

Export inroads

To build exports to Japan, the Division facilitated the supply of soybeans for tofu production and progressed breeding of suitable varieties of natto-type soybeans for a major Japanese buyer. Tofu beans sales are valued at over \$500 000 per annum. The Division also organised a wine promotion in Tokyo and Kobe for small wineries from Orange and Mudgee, one of which has since made a number of sales visits.

The Division assisted in the export of \$1 million worth of NSW meat for retail sale in Korea and secured new exports of Sydney Rock oysters. Markets in Singapore and the United Arab Emirates were investigated.

Staff addressed 51 incoming Chinese delegations on a fee-for-service basis and arranged two week-long training courses in cherry and grape production. They also organised a visit from the Chinese Quarantine Service to inspect monitoring systems in order to alter the bluetongue protocol. The new protocol will open up export of NSW cattle to China.

Animal welfare

Divisional representatives participated in the Police Minister's Animal Cruelty Task Force along with officers from the Police, the RSPCA and the Animal Welfare League, the agencies which collectively enforce the *Prevention of Cruelty to Animals Act 1979*. The task force is investigating better intelligence sharing about offences involving deliberate cruelty to animals.

We also contributed to the development of national standards and codes of practice. These were the national standards for mulesing sheep which will form an appendix to the *Australian Model Code of Practice for the Welfare of Animals: The Sheep* and the review of the *Australian Model Code of Practice for the Welfare of Animals: Pigs*. The review is examining various aspects of pig housing, including the controversial issue of sow stalls.

Two publications were released, the revised *Standards for Exhibiting Carnivores in NSW* which addresses additional display and enclosure methods and covers a wider range of carnivore species, and the evidence-based *Best Practice Guidelines for the Housing of Rats in Research and Teaching Institutions in NSW*. The guidelines will contribute to optimum use of rats as research subjects.

In other major activities for the year, the Division played a crucial role in framing the *Prevention of Cruelty to Animals Amendment Act 2004* which gives organisations such as the RSPCA, NSW Police and the Animal Welfare League added powers to protect animals from cruelty. The legislation was developed after extended consultation with animal welfare groups and farming interests.

Regulations for the *Exhibited Animals Protection Act 1986* and the *Animal Research Act 1985* expire in September 2005. In the interest of continuing protection for animals, the Division drafted improved regulations and published a regulatory impact statement in June seeking public comment on the proposals.

Divisional performance

	Units	2002-03	2003-04	2004-05
Outcomes:				
Crop area sown using reduced tillage technology	%	60	50	70
Producers trained in Prograze using improved grazing management	%	93	95	95
Satisfactory test results from pesticide surveys of NSW produce	%	99.8	99.9	99.9
Aquatic species protected	no.	25	25	27
Aquatic communities protected	no.	37	38	39
Aquaculture production	\$m	50.7	53.4	53.0

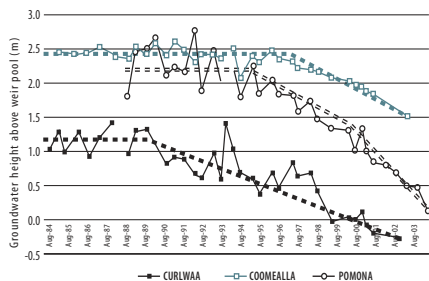
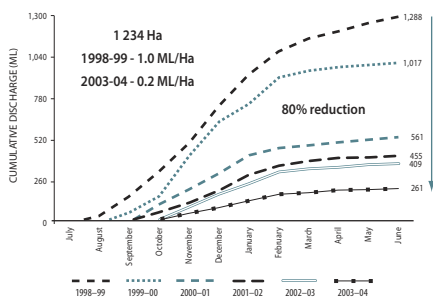
Outputs:

Farmers attending production or farming systems workshops	no.	14 034	11 000	11 000
Animal Welfare Licences issued (research and exhibited animals)	no.	420	441	440
Value of PRIMEX assisted sales and negotiations	\$m	3.0	4.5	5.0
Lamb traded 'over the hooks'	%	20	25	25
Native fish stocked	mill	2.3	2.6	2.4
Habitat restoration sites	no.	72	131	203
Land-based fish farms	no.	50	238	219
Areas of submerged lands leased	ha	4 432	4 338	3 982
Fishery management strategies completed	no.	3	3	4

CASE STUDY

Appropriate access to and wise management of natural resources

Use of advanced technologies and management systems has improved the quantity and quality of fruit



IRRIGATION INITIATIVE PROVES LESS IS MORE

The results are in from a NSW DPI WaterWise program in the lower Murray Darling region and make impressive reading. Water use efficiency has improved, as has fruit quality, and much less salt is entering the Murray River due to the lower watertables.

The program began six years ago when, under the NSW Government's State Water Reform Initiative, NSW DPI irrigation officers started to promote more efficient systems for applying water and better scheduling of irrigation.

The officers taught farmers in the region, which is famous for its oranges and grapes, about the advantages of applying water to crops through micro systems such as drip and mini sprinklers. Adoption of micro systems tripled during the program's six years. Currently more than three-quarters of farmers use such systems. Adoption of high technology scheduling, based on improved monitoring and knowledge of plant water requirements, followed a similar pattern. A third of farmers in some areas now follow this best management practice.

The improvement in water use efficiency through the program has reduced deep drainage – by 80 per cent in the Coomealla district – and has contributed to lowering watertables by over two metres in some areas. (The graphs at left show the trends over the course of the program.) The lowered watertables will significantly reduce salt accessions to the Murray River.

Use of advanced technologies and management systems has improved the quantity and quality of fruit produced. But the river has also benefited from the program's ancillary environmental outcomes and the local community has benefited from rising horticulture profits.

NSW DPI was instrumental in changing irrigation techniques through partnership with industry on delivery of the WaterWise Introduction to Irrigation Management Course and follow-up extension activities. Future WaterWise and more advanced irrigation courses will be delivered under the new \$5.8 million PROfarm agricultural training program. (NSW DPI provides these courses.)

NSW DPI will continue to ensure that irrigation farmers have appropriate access to water and implement initiatives to improve irrigation systems (as opposed to on-farm efficiency) through representation on water policy committees.

CASE STUDY

Appropriate access to and wise management of natural resources

NSW DPI is committed to opening up economic opportunities for Aboriginal people

NSW DPI BACKS INDIGENOUS OYSTER FARMING

With help from NSW DPI, a local Aboriginal land council on the South Coast has entered the aquaculture business. The Indigenous Fisheries Strategy provided the framework.

The venture began with NSW DPI facilitating the Bodalla Local Aboriginal Land Council's purchase of oyster leases at Narooma. Understanding that the council would need additional start-up support, NSW DPI also made in-kind contributions including:

- allocating hatchery and wild oyster spat
- sourcing farming equipment such as punts, an outboard motor and a grading machine and trays
- setting up a local support network for the land council.

NSW DPI then established partnerships with several other government agencies to put together a comprehensive business package. The NSW Department of State and Regional Development came on board with funds for business planning while the NSW Department of Education and Training funded employment of six Aboriginal trainees on the oyster leases.

The trainees spend four days a week working the oyster leases and one at a local TAFE college where they receive formal training.

For the Bodalla Local Aboriginal Land Council, the future is looking very bright indeed. The land council is even investigating the potential for business expansion after harvesting the first batch of saleable oysters in 2006.

The aquaculture venture, which has been a notable achievement for NSW DPI, affirms NSW Government commitment to opening up economic opportunities for Aboriginal people.