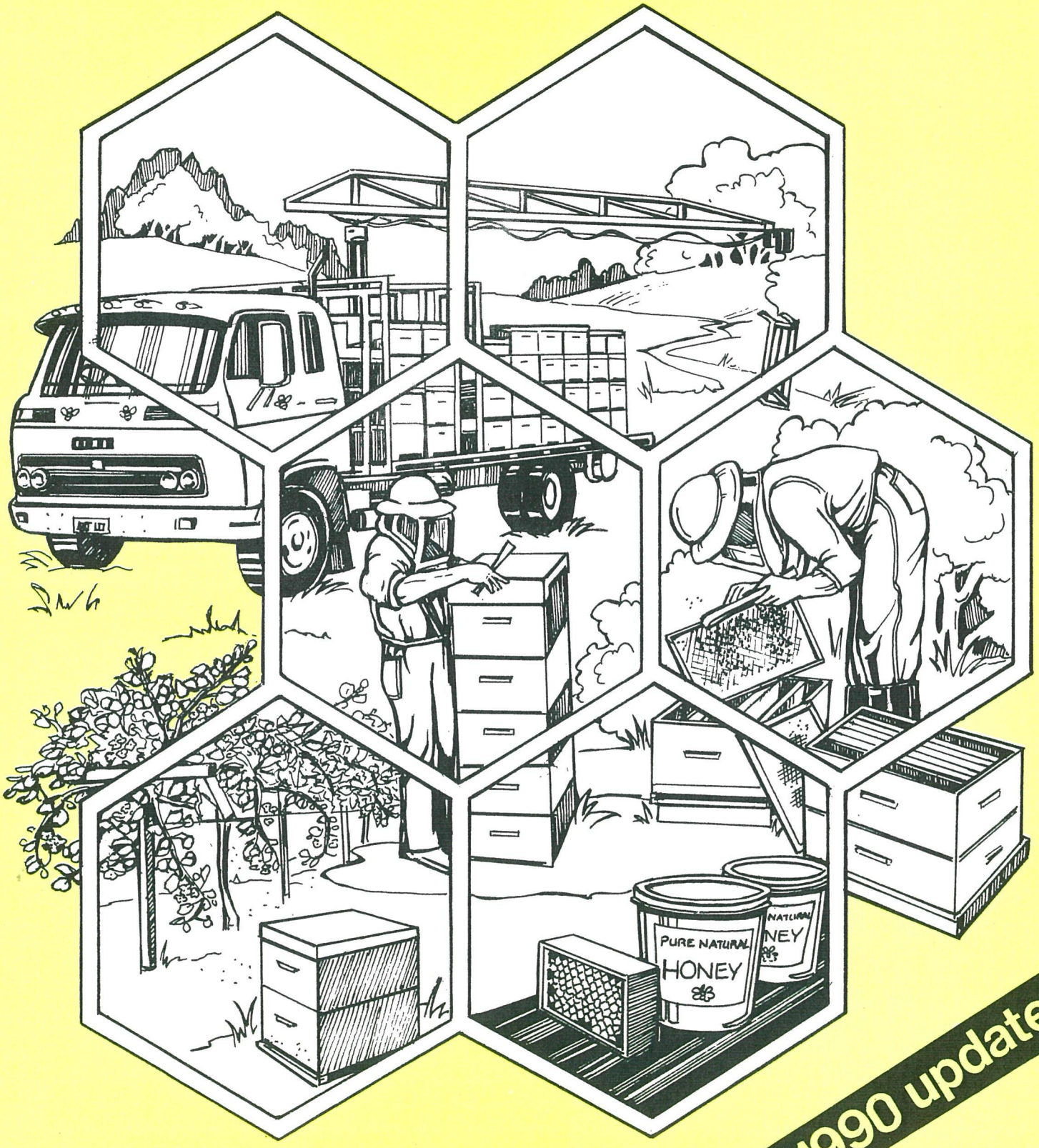
NEW ZEALAND BEEKEEPING – AN INDUSTRY PROFILE



1990 update

The National Beekeepers Association of New Zealand

NEW ZEALAND BEEKEEPING

- AN INDUSTRY PROFILE

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Who are beekeepers? What do they do all year? Is it really possible to earn a living from bees? We've "lifted the lid" on these and other questions, by introducing you to three typical beekeepers.

"YOU KEEP BEES FOR FUN?"

Mary Stewart is a hobbyist beekeeper, living in a reasonably large provincial town. She owns only three beehives, though she takes care of two other hives belonging to a friend who started beekeeping with her but later lost interest.

Mary is employed fulltime as a shop assistant. She does all of her beekeeping work in the late afternoons and especially in the weekends. She finds the hobby both interesting and diverting from her daily activities.

Though her uncle was a hobbyist beekeeper, Mary didn't take any interest in beekeeping at all until a friend suggested that they take on the activity together. They attended a set of evening classes at the local Polytechnic before actually purchasing a hive, learning what time and money would be involved.

Mary's first hive was bought from a local hobbyist who had found his son to be allergic to beestings. She purchased bee boxes and frames in kitset form from a beekeeping supply shop and assembled them in her garage, then stocked her two new hives with bees taken from her original hive. Mary purchased three queen bees which were delivered by post, using two for the new colonies and one to replace the queen in her original hive as these bees were too aggressive to keep in town.

One of her hives is kept in her backyard, as she likes to be able to rush out after work to take a quick look to see how the bees are doing. The other two, plus the two hives she manages, are on her brother's farm just out of town. She generally combines a social visit with an opportunity to check on the hives.

Though she made mistakes in her first season, she still managed to produce a little surplus honey. Because a honey extractor costs too much for a person with just a few hives, Mary cut up the honey combs and squeezed them through a cheesecloth - a slow and messy job. During her second season she became involved in the local hobbyist beekeeping club, and now rents the club's hand-powered extractor for one day each year to extract the honey.

Most of her honey is either eaten by her family or given away to relations and friends. She does sell some to her workmates, but the supply is rather erratic. In a good season she has had as much as 250 kg of honey from the five hives, though her annual average is about 140 kg. One season she didn't take any honey at all, as constant rain meant the bees couldn't get out to forage.

Mary has had minimal involvement with the beekeeping industry as a whole over the years. She occasionally looks at the New Zealand Beekeeper magazine in the city library, but she doesn't pay a subscription to the National Beekeepers' Association. She still attends meetings of the local hobbyist club but has never been to a meeting of the local National Beekeepers' Association branch, as she sees their beekeeping concerns relating mostly to marketing and commercial activities.

"THAT'S ENOUGH HONEY TO DROWN IN!"

John and Allison Snelgrove are commercial honey producers, living in a small town on the Canterbury Plains.

John qualified as an electrician and Allison has worked as a secretary in the past. The first year after buying their beekeeping business they nearly had a complete crop failure. They both had to go out to work to get through the rough time, and felt fortunate they had their other skills to fall back on.

The business currently consists of 1350 hives. The beekeeper that John and Allison bought out had only about 950 hives, but since purchasing the hives and honey house they have increased the colony numbers. Most of the increase was to fill up apiaries that didn't have enough hives in them to be economic.

One of their first visitors after buying the business was the local health inspector, who suggested a programme to bring the building up to standard. John and Allison realise the equipment and building are fairly antiquated, but can't justify to themselves (or their bank manager!) going deeper in debt to upgrade or build a new honey house for several more years at least.

Each year they try to take the main honey crop from some of the hives as early as they can. Then they transport the hives by truck to the honeydew areas in the foothills. Though the yield has been erratic, they consider the venture worthwhile because of the relatively high value of the honeydew produced.

John does most of the field work, leaving in the five-tonne truck each morning to drive to the apiaries. Some of these are as far as 150 km from the home base, so his working day can be pretty long. During the busiest part of the beekeeping season, the spring time, John needs to visit each of the nearly 70 locations about every three to five weeks. John has a lot of jobs to do on each visit, including feeding the hives, replacing old queen bees, repair and maintenance of the hive and inspecting for diseases.

After adding extra boxes to the hives as they require additional storage space over the Christmas period, John begins to take the surplus honey from the hives and bring it back to the honey house. Both John and Allison work in the honey house over the summer, extracting the crop and storing it in drums.

Because they have always sold their crop in bulk to a local honey packer, they are not burdened with the additional work of packing and marketing all their crop. They do pack a small amount each year, primarily for gifts to the property owners where they keep their hives. They also sell a small amount of honey at the back door, filling local customers' own containers.

Allison does all of the accounting work for the partnership. This involves paying accounts and wages and keeping an eye on the budget and cashflow forecast. For the last two seasons they have employed a local school leaver. Because he had no previous beekeeping experience the young man was considered on trial

for the first month or so. Several previous attempts at employing helpers had resulted in the workers quitting suddenly after the first "good stinging". John has now offered to pay the worker's fees for the Certificate in Beekeeping correspondence course, to try to teach the employee some of the other aspects of beekeeping.

John realises that the system he has developed for managing his hives may be quite different from that of other beekeepers. What works for him in his area might not be suitable in another locality or climate. John and Allison realise, too, that after the worker is fully trained, he might decide to move on or start up beekeeping on his own account.

They make most of their own hive woodware during the winter period. As they feel obliged to keep the helper employed year round, this regular repair and maintenance of equipment keeps work available through this otherwise slack period.

One or both of them generally attend the local National Beekeepers' Association branch meetings, as well as any field days that are organised in the area. They see these meetings as a good opportunity to catch up on what the season has been like in surrounding areas, as well as any opportunities to make bulk purchases of materials in co-operation with other beekeepers.

For several years now, they have travelled to the National Beekeepers' Association annual conference in July. Because the summer period is such a busy one with supering up and removing honey from the hives, they wouldn't be able to get away for more than the odd day during that time. They combine the annual conference with a few weeks holiday, even though the winter weather is not always ideal.

John and Allison don't think they want to be beekeepers until they retire. John's back is giving him trouble now, and he may be forced to change jobs. If any of the children decide to get involved when they leave school the business will need to be expanded to provide another income. If the kids aren't keen John and Allison will probably sell the business, either as a going concern or as groups of hives.

"BUT I THOUGHT BEEKEEPERS PRODUCED HONEY..."

Bob and Joanne Hopkins are in their second season of full time beekeeping in the Bay of Plenty.

They spent three years building up their business from the 50 hives that Bob was running as a sideline to their present 650 hives. During this time Bob worked full-time as a builder and Joanne worked as a nurse part time, in addition to taking care of their young family.

The last year of sideline beekeeping was fairly hectic, trying to take care of 350 hives on a part-time basis while spending every other free moment behind a saw bench cutting timber for the increase in hive numbers. Now that they're established they have decided to buy all of the hive parts, even though Bob has carpentry experience. They found that if they actually counted the time involved in doing it themselves, it would be cheaper to buy the equipment from a supplier. During the building up phase, however, they felt the actual cash outlay would be better spent on more hives, since they were in effect "donating" their labour to the business.

During this transition from sideline beekeeping to full time commercial beekeeping, the Hopkins received a lot of good advice from the local MAF apicultural adviser. This came in the form of workshops, discussion groups and many late night telephone calls. The Hopkins wonder, with the changing conditions such as "user pays", if new beekeepers can afford the financial, management and planning advice they received to help them get established.

Their MAF adviser was also a great help during their second season, when they had to burn 34 hives because of the serious bee disease American foulbrood. With sound advice the disease outbreak was contained and didn't stop their expansion programme. It gave them a real scare, and made them realise how important regular disease inspection is.

Their hives are managed each season with the primary goal of placing as many as possible into kiwifruit orchards for the November flowering period. These contracts provide the vast majority of their cash flow. As beekeepers, the Hopkins are not really producers as such; they provide a pollination service to the local orchards.

Because of the tremendous number of hives required during that three-week period of November, beekeepers have in effect "overstocked" the region for any possible honey crop, except in the best of seasons. Trying to obtain sites nearby to avoid travelling too far afield resulted in arguments with other local beekeepers, who "claimed" the area through right of historical siting of their hives. Rather than press the issue, the Hopkins have most of their sites over two hours travel from their home, which does tend to increase their running costs.

Being out of the crowded area has given them one advantage, though, because in some seasons they can produce a reasonable crop of honey after pollination. The hives often come out of the orchards in poor condition because of pesticide poisoning and lack of feed, so the Hopkins have been hesitant about counting too much on getting a honey crop.

Bob and Joanne don't have a honey house. Another beekeeper, George Miller, built quite a large new facility nearby, and the Hopkins contract him to extract their crop if there is one. In this way they don't have a large amount of capital tied up in plant that would only be used for several months each year. Any honey they do produce is sold to George, who then packs it for sale.

Their business, then, consists primarily of the hives, a three-tonne truck and a small utility vehicle, and a workshop/storage shed. They hire labour for the pollination period, to help with the big job of shifting all of the hives into and out of the orchards. It is a trying period, with Joanne busy through the day setting up lists of orchards that have rung requesting hives to be delivered that night. Bob tries to catch a few hours sleep, but often must be out preparing hives. He leaves with the helpers in the late afternoon and usually doesn't return from shifting hives until the early hours of the morning.

They have been looking into the idea of producing comb honey after the pollination period, rather than bulk extracted honey. Though there is more labour involved, they think the return per hive should be higher. With the relatively small number of hives they have this is an important consideration. Another is that world market prices for bulk honey are less stable than for specialty products. They feel that trying to produce speciality packs of comb honey may give them a better return in the long term.

They are active in both the local branch of the NBA and the pollination association that was formed several years ago. Joanne has been secretary of the local NBA branch for two years. By involving themselves in this way, they not only keep up with their local area but also what is going on with their industry on a national basis.

THE NEW ZEALAND BEEKEEPING INDUSTRY

1. WHAT THE INDUSTRY DOES - PRODUCTS AND SERVICES

Honey has traditionally been the chief product of New Zealand beekeeping. This is still the case, but other products and services are becoming increasingly important to the industry. Pollination fees and the export of live bees make up a growing share of beekeepers' incomes.

1.1 HONEY

... pollination of pasture legumes provides more than $1,750 million each year worth of nitrogen to the country's soils

In 1988-89 5,752 tonnes of surplus honey were produced in New Zealand, compared with an average production for the previous five years of 8,675 tonnes per year.

About 25 % is exported each year: some in bulk (200 litre) drums, but much in retail packs. Comb honey is a popular item in some markets, and attracts good prices. Specialty honey from single floral sources, such as manuka and ling heather, attracts premium prices. Other specialty lines include high-moisture honey, very light-coloured honey (0-9 mm Pfund) and organic honey. Honey mixed with dried fruit is also used as a spread.

1.2 POLLINATION

Paid pollination of horticultural and agricultural crops has increased in New Zealand to the point where over 90,000 honey bee colonies are rented out each year. The vast majority of these (an estimated 80,000 hives) are used in kiwifruit orchards, with apples and pears, berryfruit and seed crops also important. Pollination services are worth over $6 million annually to the beekeeping industry.

Honey bee pollination has great benefits to New Zealand agriculture and horticulture. Crops directly relying on bee pollination are worth over $500 million per year, while pollination of pasture legumes provides more than $1,750 million each year worth of nitrogen to the country's soils.

There has been no shortage of hives for kiwifruit pollination ...

The demand for pollination will continue to increase, and the beekeeping industry will also match this demand if pollination fees remain at a profitable level. There has been no shortage of hives for kiwifruit pollination, despite predictions that there would be from 1987 onwards. The pollination industry has been concentrating in the last few years on ensuring consistent quality in pollination hives, and improving liaison with horticultural grower groups. Management practices have continued to evolve, with widespread feeding of sugar syrup to hives and the use of hydrogen cyanamide to aid bud burst in kiwifruit

1.3 LIVE BEES

Export of live bees has increased recently. This trade is in packages of worker bees (each with a queen) to stock hives in the northern hemisphere spring, and separate queen bees for hive increase and replacement of overwintered queens. The main market for both packages and queen bees is Canada. Negotiations over about five years have opened up access for New Zealand bees into the United States from 1991. New Zealand is one of only two countries able to ship bees to the USA and Canada.

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In the 1988/89 season 9,458 packages, plus over 40,000 extra queens were exported, with an estimated total value of $NZ 600,000 c & f.

1.4 OTHER PRODUCTS

Beeswax is an important byproduct of honey production. Much of it is recycled into comb foundation for use by beekeepers, but 150 tonnes per year are used in other industries or exported.

Pollen is trapped from bees and used in the health food trade. Several tonnes per year are produced in New Zealand.

1.5 SUPPORT INDUSTRIES

A number of companies make equipment for the beekeeping industry, such as hive woodware and honey-processing plant, which is used locally and exported. Honey containers are an important product for some packaging manufacturers.

2 COMPOSITION OF THE INDUSTRY

2.1 SIZE OF INDUSTRY

New Zealand's beekeeping industry has been growing steadily for the past 20 years. At 31 May 1989 there were in New Zealand:

6,695	beekeepers
27,082	apiaries (places where bees are kept)
330,338	beehives

Growth in hive numbers has been around 6 % per year throughout most of the 1980s, though there has been a small decrease since 1987.

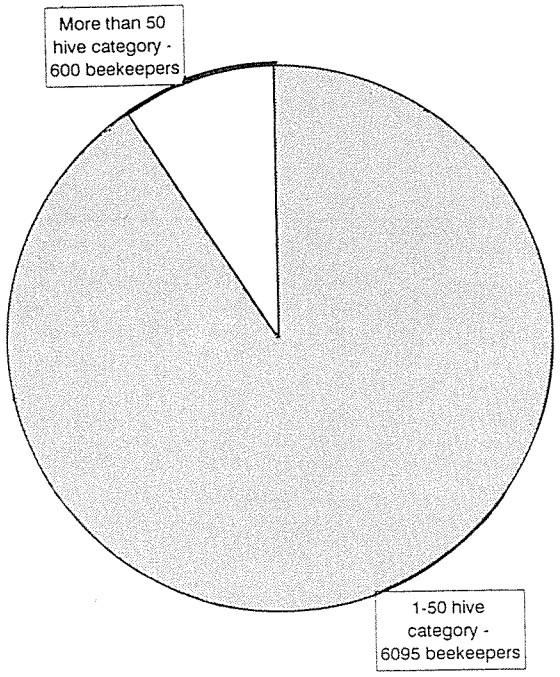
... most of the hives are owned by a few people or businesses

2.2 CATEGORIES OF BEEKEEPERS

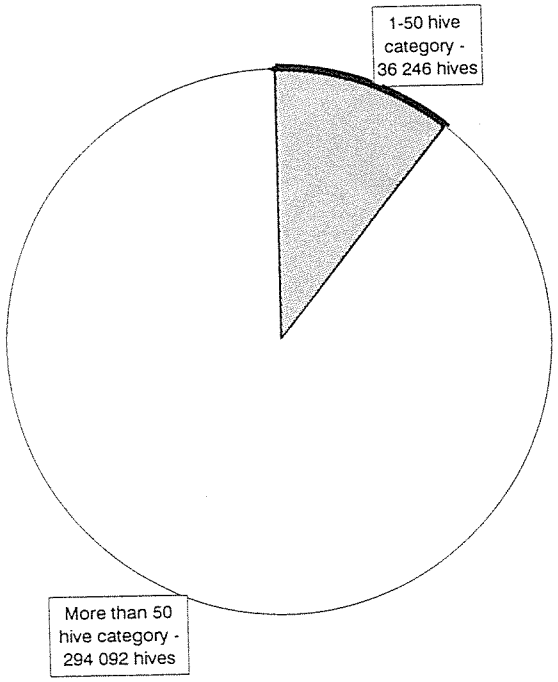
In New Zealand, as in other countries with a significant beekeeping industry, most of the hives are owned by a few people or businesses. Semi-commercial or commercial businesses (more than 50 hives) make up only 9 % of the beekeepers, yet between them keep 89 % of the hives.

At least 700 hives are generally needed to provide a fulltime living for a family.

Beekeepers in each hive holding category



Number of hives owned by beekeeper categories



Though there are only 600 registered beekeepers in New Zealand with more than 50 hives, quite a few of these are companies employing from several to dozens of staff.

Hobbyists keep only 11 % of beehives in this country, but constitute 91 % of registered beekeepers. They are still important to the industry, as most new commercial beekeepers come from this group. Because of the free-ranging nature of bee diseases, each sector of the industry can affect the other.

3 WHAT THE INDUSTRY IS

3.1 INDUSTRY ORGANISATIONS

National Beekeepers' Association

The principal organization within the beekeeping industry is the National Beekeepers' Association of New Zealand (Incorporated), or NBA. Membership is open to any individual or organization, and is automatic for beekeepers with 50 hives or more.

The NBA exists to encourage beekeepers to work together for the industry and plan for its future growth. Some of its functions and activities are to:

The NBA exists to encourage beekeepers to work together for the industry and plan for its future growth.

* Represent beekeepers to the Ministry of Agriculture and Fisheries and other government bodies
* Carry out strategic planning for the industry
* Encourage communication among beekeepers, through field days, branch meetings and national conferences
* Provide a library, a national magazine (the *New Zealand Beekeeper*), and a regular newsletter (*Buzzwords*)
* Promote the beekeeping industry to the general public
* Support beekeeper education
* Foster beekeeping research
* Fund MAF's bee disease inspection programme

Fifteen branches, a national executive and an executive officer make up the NBA.

Other industry organizations

Special interest groups are represented by other associations:

* New Zealand Queen Bee Producers' Association is a national group fostering co-operation among producers of queen and package bees.
* Pollination associations exist in several regions where pollination is a major activity.
* Specialist groups also exist for producers of comb honey, honeydew and packed honey.
* Hobbyist beekeeper clubs exist in many towns and cities.

Beekeeping industry trust funds

Two trust funds were established in 1983 to invest money from the sale of assets from the New Zealand Honey Marketing Authority. The objectives of the trusts are to further the general advancement of the beekeeping industry in New Zealand through education, study, investigation and research.

Grants are made to support beekeeping research, education and other projects of potential value to the industry.

3.2 HISTORY

... one of the first modern bee disease control laws in the world

For over 150 years honey bees have been kept in New Zealand, and in that time beekeeping has moved from being a home craft to a progressive industry that leads the world in some fields. New Zealand is recognized around the world as being an advanced beekeeping country.

British settlers brought the first honey bees to New Zealand. The earliest successful shipment we know of was two straw skeps that arrived in Northland in 1839. Many other importations followed and beekeeping soon became a popular pastime, with the first New Zealand beekeeping book published in 1848.

The first bees imported to this country were black bees from European stock, and hives were the traditional straw skeps and wooden boxes without frames. Around 1880 the first Italian bees and movable-frame (Langstroth) hives were imported, laying the foundation for today's industry.

American foulbrood must have been imported fairly early on, and by the 1880s it became rampant in the many box hives in New Zealand. These hives can't easily be inspected for brood diseases, which spread rapidly.

Isaac Hopkins, a prominent commercial beekeeper, campaigned for bee disease control legislation from the 1880s, and in 1905 he was appointed as a Government Apiarist. Shortly after that the first Apiaries Act was passed, which made box hives illegal and introduced control measures for American foulbrood. This was one of the first modern bee disease control laws in the world, and began a concerted and successful campaign to reduce the incidence of the disease thus making commercial beekeeping viable.

The National Beekeepers' Association began a strategic planning approach ...

After the First World War beekeeping increased rapidly as more land was developed and returned servicemen trained as beekeepers. Hive numbers doubled to nearly 100,000 by the end of the 1920s.

Between the wars various market organizations attempted to stabilize prices in an industry with very variable crops, and by 1938 much of the crop was sold by a government agency called the Internal Marketing Division.

Beekeeping increased again after the Second World War, and by 1950 around 7,000 beekeepers kept over 150,000 hives. In 1955 the Honey Marketing Authority took over the Internal Marketing Division's activities and for the next 25 years was almost the sole exporter of extracted honey.

The late 1970s and 1980s brought large changes to the beekeeping industry. The National Beekeepers' Association began a strategic planning approach to settling priorities for this industry. The Honey Marketing Authority ceased operations, and exporting honey was opened up to other individuals and companies. The numbers of beekeepers and hives continued to increase rapidly, both to provide pollination services and for honey production. The range of exports grew to include many different types of honey products, as well as live bees.

4 GOVERNMENT INVOLVEMENT

4.1 MINISTRY OF AGRICULTURE AND FISHERIES (MAF)

MAF is the government agency most concerned with the beekeeping industry, and is involved in consultancy, regulatory and research activities.

Consultancy

MAF's apiculture services, consisting of four Apicultural Advisory Officers (AAOs), is responsible for providing consultancy or advisory services to the beekeeping industry. These services cover a wide range of subjects including technical, financial and market development. MAF also has considerable experience in consulting on beekeeping overseas.

... a state of readiness to deal with any exotic bee diseases or pests that are introduced to New Zealand

Disease control

MAF apiculture services also administers the Apiaries Act 1969 (discussed in detail below). This involves MAF in registering all apiaries, ensuring that beekeepers carry out their statutory responsibilities to control bee diseases, and conducting a disease inspection programme to monitor disease incidence. In 1988-89 MAF inspected 8.3% of registered apiaries. The disease inspection programme is co-ordinated by AAOs, and uses both other MAF staff and beekeepers as inspectors.

A major part of MAF's bee disease control programme consists of maintaining a state of readiness to deal with any exotic bee diseases or pests that are introduced to New Zealand.

MAF staff regularly monitor hives for the presence of exotic diseases and pests, and undesirable races of bee.

MAF has a bee disease diagnostic service at Lynfield in Auckland. This unit can identify endemic and exotic diseases, to support both MAF and beekeeper efforts to control diseases.

... to guard New Zealand's high bee health status

Border protection

The Border Protection Service of MAF works at all ports of entry to guard New Zealand's high bee health status.

Export certification

MAF negotiates with other governments over access conditions for New Zealand bees and bee products. Officers of MAF audit producers' quality control systems and certify export products.

Research

A beekeeping research unit at the Ruakura Research Centre near Hamilton is one of MAF's two centres for apicultural research. The scientist's position is supported by funds from MAF, the National Beekeepers' Association and the New Zealand Kiwifruit Authority, and technicians are provided by MAF.

At Invermay in Otago MAF has another beekeeping research unit, supported by beekeeping and pastoral industry trust funds.

4.2 DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH (DSIR)

Scientists from the DSIR's Plant Protection Division work at both Mt Albert and Lincoln on bee diseases, wasp control and crop pollination.

4.3 UNIVERSITIES

Several universities have students and staff carrying out research on bees, honey, pollination and honey marketing, from undergraduate to post-doctoral levels.

4.4 EDUCATION AND CAREER OPPORTUNITIES

Polytechnic system

Evening and weekend courses in beekeeping, ranging from beginners to advanced level, are held at several polytechnics.

Evening and weekend courses in beekeeping, ranging from beginners to advanced level, are held at several polytechnics, including Carrington, Waikato, Tairawhiti, Nelson and South Canterbury.

A self paced distance education course leading to a certificate is offered by the Bay of Plenty Polytechnic in Tauranga, on behalf of the National Beekeepers' Association. Students complete a total of ten written modules and attend two short courses over a minimum period of two years. The course is validated to the Ordinary Certificate level by the Authority for Advanced Vocational Awards.

Telford Farm Training Institute

A one year residential training programme is available at Telford Farm Training Institute. The small number of trainees get supervised experience under commercial conditions, as well as being involved in other agricultural and engineering activities.

For several years the industry has shown support for the programme in the form of a bursary, provided through the Industry Trust Fund on the recommendation of the National Beekeepers' Association.

Telford also conducts specialised beekeeping courses for overseas students.

4.5 LEGISLATION AFFECTING BEEKEEPERS

Apiaries Act 1969

... to protect and encourage beekeeping

This Act exists to protect and encourage beekeeping in New Zealand, and to increase honey production and pollination services. It requires the registration of apiaries, regulates control of bee diseases, and contains provisions relating to other aspects of beekeeping.

* Registration of apiaries

All places where bees are kept must be registered with MAF as an apiary. Apiaries must be identified with the code number allocated to that beekeeper, must be maintained in reasonable order with access to hives kept clear.

The most important bee disease present in New Zealand is American foulbrood.

* Hive equipment

Honey bees may only be kept in movable-frame hives, in which all the combs can be readily removed for examination without cutting. Fixed comb hives and feral (wild) colonies of bees are prohibited because they cannot readily be inspected for brood disease.

* Diseases

The most important bee disease present in New Zealand is American foulbrood (AFB), also called Bacillus larvae (BL).

There are many serious diseases and pests of the honey bee not present in New Zealand ...

Beekeepers' responsibilities with AFB include immediate notification to MAF if it is found, and taking prompt steps to eradicate the disease and prevent its spread. For most beekeepers this means burning all bees, combs, honey, and hive equipment and burying the ashes. Beekeepers with adequate plant may sterilize in hot paraffin wax hive equipment (except frames) that is in good condition.

Feeding antibiotics to prevent or treat American foulbrood is illegal in New Zealand, because such drug therapy suppresses but does not eradicate the disease.

The Apiaries Act also contains provision for eradicating or controlling exotic diseases and pests. These threats to the beekeeping industry are discussed in more detail in appendix 5.

* Importing bees, bee products and appliances

There are many serious diseases and pests of the honey bee not present in New Zealand, but which could harm the beekeeping industry if they were accidently introduced. The importing of honey, bee appliances, or bees is strictly controlled because pests and diseases could gain entry with them.

Any prohibited bee product poses a real threat to this country's beekeeping industry.

No one may import (without the permission of the Minister of Agriculture) any used beekeeping appliances, or any bees, honey, honeydew, beeswax, pollen, venom, propolis, royal jelly, or other bee products. Detailed importation restrictions and permit requirements can be obtained from MAF's National Manager (Apiculture) - for the address see appendix 7.

At present MAF's agricultural quarantine service seizes over 2000 containers of honey every year from passengers entering New Zealand. Any prohibited bee product poses a real threat to this country's beekeeping industry.

Pesticides Regulations 1983

Indiscriminate use of insecticides can kill bees over a wide area, resulting in financial loss to the beekeepers concerned and to farmers or fruit growers who rely on those hives for pollination.

The Pesticides Regulations 1983 require an insecticide that is toxic to bees to carry the label instruction "Toxic to bees", followed by conditions for its use. These instructions form part of the law and must be complied with.

Indiscriminate use of insecticides can kill bees over a wide area ...

Hive Levy Act 1978

Any beekeeper who keeps 50 or more hives must pay an annual hive levy to the National Beekeepers' Association of New Zealand (NBA). This levy is to aid the promotion, development, and improvement of the beekeeping industry. It is collected on the basis of a beekeeper's declaration to the NBA of the number of hives kept.

Food Hygiene Regulations 1974

Extracting, processing and packing honey must be carried out in premises that are registered under the Food Hygiene Regulations. These are administered by local authority health inspectors.

Food Act 1981, Medicines Act 1981

These laws establish minimum standards for the labelling and chemical composition of food, and restrict claims for theraputic properties of products.

5 APPENDICES

1 Beekeeper, apiary and hive statistics

2 Honey production, 5 year average, average per hive

3 Honey export statistics

4 Production of other bee products

5 American foulbrood incidence

6 Overseas threats to the New Zealand beekeeping industry

7 Contact names and addresses

8 Sources of further information

Appendix 1:

NEW ZEALAND BEEKEEPER, APIARY & HIVE STATISTICS AS AT MAY 31 1988

1-50 hives

Apiary district	Beekeepers	Apiaries	Hives
Whangarei	581	903	3473
Auckland	1185	1618	5638
Hamilton	605	909	3843
Tauranga	585	878	4334
Palmerston North	1366	1982	7888
Nelson	500	839	3193
Christchurch	789	1315	4737
Gore	484	727	3180
Totals	6095	9171	36246

More than 50 hives

Apiary district	Beekeepers	Apiaries	Hives
Whangarei	33	875	15737
Auckland	41	861	15221
Hamilton	66	2146	42663
Tauranga	108	2948	55555
Palmerston North	71	2183	31071
Nelson	61	1384	22264
Christchurch	112	3773	56158
Gore	108	3729	55246
Totals	600	17911	294092

Totals for all beekeeper categories

Apiary district	Beekeepers	Apiaries	Hives
Whangarei	614	1778	19170
Auckland	1226	2479	20859
Hamilton	671	3055	46506
Tauranga	693	3826	59889
Palmerston North	1437	4165	38959
Nelson	561	2223	25457
Christchurch	901	5100	61072
Gore	592	4456	58426
Totals	6695	27082	330338

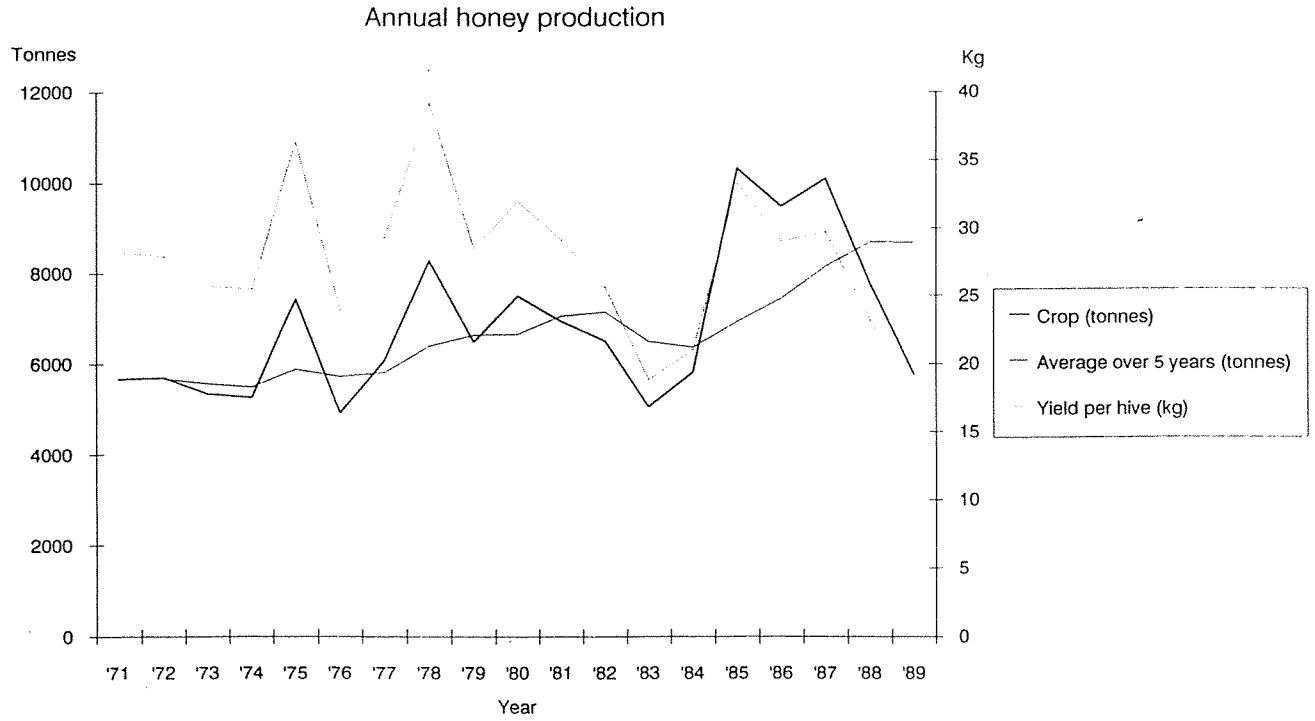
Source: MAF apiculture services

Appendix 2:

NEW ZEALAND HONEY PRODUCTION, IN TONNES (AS AT 31 MAY ANNUALLY)

Year	Crop (in tonnes)	Yield per hive (kg)	Average of last 5 yrs
1971	5658	28.2	5658
1972	5693	27.9	5676
1973	5341	25.7	5564
1974	5262	25.5	5489
1975	7411	36.3	5873
1976	4915	23.9	5724
1977	6078	29.3	5801
1978	8279	39.2	6389
1979	6474	28.5	6631
1980	7489	32.0	6647
1981	6931	29.1	7050
1982	6495	25.6	7134
1983	5053	18.8	6488
1984	5818	21.0	6357
1985	10314	33.3	6922
1986	9471	29.0	7430
1987	10091	29.7	8149
1988	7748	23.1	8688
1989	5752	17.4	8675

Source: MAF apiculture services



Appendix 3:

HONEY EXPORT STATISTICS

Year to 30 June

Category	1984		1985		1986		1987		1988		1989	
	Quantity (tonnes)	Value ($NZ x 1,000 f.o.b.	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Bulk honey	186	343	830	1,646	2,373	5,145	605	1,526	1,074	1,905	582	1,486
Retail packs	168	416	175	552	309	931	238	892	583	1,910	264	1,006
Comb honey	274	1,460	259	1,622	194	1,164	273	1,492	260	1,695	162	1,086
Honeydew honey	197	349	662	1,336	470	1,082	406	855	128	323	31	107
Beeswax	n/a		n/a		60	419	63	381	122	544	86	458

Source: Customs Department, Ministry of Commerce

Appendix 4:

PRODUCTION OF OTHER BEE PRODUCTS

Queen Bees

New Zealand has been exporting queen honey bees to a number of markets for some years. In 1988-89 an estimated 40,075 queens were exported.

In addition to exports, queens are required by the local industry. Production for sale within New Zealand was estimated at 73,900 for 1986-87.

Package Bees

In the past few years packages of worker bees have been exported to Canada, to restock hives after the winter. This opportunity has arisen because of bee parasites arriving in the United States preventing supply from that market.

In 1988-89 9,458 one-kilogram-equivalent packages (each with one queen bee additional to those listed above) were exported.

Value of Queens and Package Bees

The estimated f.o.b. value of bee exports was $NZ 500,000 in 1988-89.

Other Bee Products

New Zealand beekeepers produce beeswax, pollen, royal jelly and propolis. Apart from beeswax few of these products are ever exported in quantity. Most production is used to supply local market requirements.

Appendix 5:

AMERICAN FOULBROOD INCIDENCE

American foulbrood (AFB) levels in New Zealand for the year ending 31 May 1989

	APIARIES		HIVES	
	Number	Percentage diseased	Number	Percentage diseased
Found by MAF or MAF agents	191		438	
Reported by beekeepers	1348		3228	
Total	1539	5.7%	3676	1.1%

Source: MAF apiculture services

Appendix 6:

OVERSEAS THREATS TO THE NEW ZEALAND BEEKEEPING INDUSTRY

Name	Category	Cause	Effects	Distribution	Introduction methods	Most likely introduction
European foulbrood *(Melisso-coccus pluton)*	Disease of young bees	Bacterium	Reduced honey production and pollination ability, at least initially. Market access more difficult if drugs fed for prevention and control. Reduced profitability for beekeepers.	Largely world-wide, including Australia	Honey; other bee products such as pollen and royal jelly; live bees	Honey imported from Australia (illegally) left open to bee access
Varroa mite *(Varroa jacobsoni)*	Pest of adults and young	External mite parasite	Complete loss of bee exports. Major destruction of honey and pollination industries.	Asia, Europe, USA, South America, Papua New Guinea, North Africa	Live bee imports	Smuggling of queen bees
Asian honey bee mite *(Tropilaelaps clareae)*	Pest of adults and young	External mite parasite	Complete loss of bee exports. Major destruction of honey and pollination industries.	Asia, Papua New Guinea	Live bee imports	Smuggling of queen bees
Honey bee tracheal mite *(Acarapis woodi)*	Pest of adult bees	Internal mite parasite	Loss of live bee exports. Probable reduction in honey production and pollination.	Europe, USA, Africa, North and South America	Live bee imports	Smuggling of queen bees
African honey bee	Undesirable genetic stock (AHB)	Genes for aggressive behaviour	Loss of live bee exports. Stinging fatalities. Difficulties for pollination and finding apiary sites.	South and Central America, USA from about 1991	Live bee imports from Central or South America	Swarm on ship
Bee louse *(Braula coeca)*	Pest of adult bees	Parasitic fly	Loss of live bee exports.	Largely world-wide except the Pacific. Nearest to NZ: Tasmania	Live bee imports	Smuggled queen bees

Appendix 7:

CONTACT NAMES AND ADDRESSES

NATIONAL BEEKEEPERS' ASSOCIATION

President - Allen McCaw
RD2
Milton — Phone and fax (03417) 7198

Secretary - Steuart Goodman
PO Box 4048 — Phone (04) 728 102
Wellington — Fax (04) 712 882

Executive Officer - Ted Roberts
c/- MAF
Private Bag — Phone (063) 68 079
Palmerston North — Fax (063) 68 130

Librarian - John Heineman
PO Box 112
Milton — (03417) 7197

The NBA has branches in the following districts:

Northland	Marlborough
Auckland	Nelson
Waikato	West Coast
Bay of Plenty	Canterbury
Poverty Bay	South Canterbury
Hawkes Bay	North Otago
South Western Districts (Southern North Island)	Otago
	Southland

Contact the National Secretary or your local MAF Apicultural Advisory Officer for the name and address of branch presidents or secretaries.

MAF CONSULTANTS

Apicultural Advisory Officers (or Apicultural Consultants) make up MAF's Apiculture Services, and are located at the following MAF offices:

		Phone	Fax
Whangarei	Private Bag	(089) 437 2822	71 368
Hamilton	Private Bag	(071) 562 839	385 846
Tauranga	Private Bag	(075) 782 069	788 429
Palmerston North	Private Bag	(063) 68 079	68 130

MAF's National Manager (Apiculture) is located at the Hamilton office.

BEEKEEPER TRAINING

Gavin McKenzie
Apiary Manager
Telford Farm Training Institute
Private Bag
Balclutha (03) 418 1550 fax (03) 418 3584

RESEARCH

Dr Mark Goodwin
Ruakura Plant Protection Group
MAF
Private Bag
Hamilton (071) 562 839 fax (071) 385 073

Dr Stephen Ogden
Invermay Research Centre
Private Bag
Mosgiel (024) 893 809 fax (024) 893 739

BEE DISEASE DIAGNOSIS

Bee disease technician
Plant Protection Centre
MAF
PO Box 41
Auckland (09) 676 026 fax (09) 674 172

NATIONAL CERTIFICATE IN BEEKEEPING

Nick Wallingford
Bay of Plenty Polytechnic
Private Bag
Tauranga (075) 440 920 fax (075) 442 386

Appendix 8:

FURTHER SOURCES OF INFORMATION

BOOKS

Matheson, A.G. *Practical Beekeeping in New Zealand.* (Government Printer, 1984). This popular and easily-read book has been written specifically for New Zealand conditions. It is available from most booksellers for $19.75.

Walsh, R. *Nectar and Pollen Sources of New Zealand.* (National Beekeepers' Association, $3.30). Contains good information on New Zealand's unique floral sources. Available from beekeeping equipment suppliers or the NBA (PO Box 4048, Wellington)

A large number of books are available on a wide range of beekeeping topics through the International Bee Research Association (IBRA). For further information contact either:

Andrew Matheson	197B Grange Rd Tauranga	(075) 782 069
Peter Brunt	c/- Nelson Polytechnic Private Bag Nelson	(054) 47 796

The IBRA can also supply pamphlets and audio-visual material about beekeeping.

The National Beekeepers' Association maintains a comprehensive library which lends books to NBA members throughout New Zealand. For further information contact the librarian:

John Heineman, Librarian	PO Box 112 Milton Otago	(03417) 7197

MAGAZINES

The New Zealand Beekeeper is a quarterly magazine, free with association membership, available from the National Beekeepers' Association, PO Box 4048, Wellington. It is also available to others for an annual subscription of $34.

NEWSLETTER

The National Beekeepers' Association also send its members a monthly newsletter, *Buzzwords*, containing topical information on industry and marketing issues.

AGLINK PAMPHLETS

MAF publishes a series of AgLink pamphlets which includes a number on beekeeping. These can be bought from any MAF office.