

Annual Review of Licences Issued under the DEC Policy on Flying-fox and Mitigation of Commercial Crop Damage for the 2003 - 2004 Fruit Growing Season

September 2004



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Executive Summary and Recommendations

This report presents a statewide summary of licensed activity under the *National Parks and Wildlife Act 1974* and the *DEC Policy and Procedures for the Mitigation of Commercial Crop Damage by Flying-Foxes* (See Appendix One).

For the 2003-2004 season;

- number of licensees was 53
- total number of licences issued was 53 + 18 variations known (note: data incomplete) (total of 71)
- majority of licences were issued in October and November 2003
- majority of licences were issued by DEC Central Directorate
- total number of animals allocated in NSW quota is **3040** (ie 0.95% of 320,000). NSW deduct 20% as reserve leaving **2432** which was allocated to the Regions at the start of the season
- additions to this allocation from the 20% reserve were required for Central Coast Hunter Region following increased demand compared to previous years
- Hunter Region, originally allocated no licences, had to be given an allocation of 100 to accommodate unprecedented demand in the area, however only one licence to harm 20 animals was issued
- despite concerns early in the season that the quota would be quickly reached this did not eventuate.
- total number of animals licensed (allowed) to be harmed was **2331**
- total number actually killed (note records for 3 licences unavailable) recorded as **1391**
- assuming the maximum numbers were killed as were allowed on licences issued, total number estimated actually killed is **1436**
- the population of GHFF from the National Count was estimated as 435,000 in April 2003 and 425,000 in April 2004
- but, based on recommendations from the 2004 Grey-headed Flying-fox National Workshop, the minimum population estimate has been used to calculate the quota to be harmed, ie 320,000, so that the total quota for 2004-2005 will be the same as last year ie **3040**.

It is recommended that

- the Policy and Procedures for the Mitigation of Commercial Crop Damage by Flying-Foxes (the Policy), established by NSW NPWS in 2002 and used for the 2002-2003 and 2003-2004 fruit seasons, be adopted again this year for the 2004-2005 season (copy of Policy attached at Appendix One)

- a full review be undertaken in 2005, in consultation with the Grey-headed Flying-Fox National Working Group, to assess how successful the Policy has been and to make recommendations for changes to the Policy or development of a new policy in the light of results from research into alternative management techniques and other developments (as described in Appendix Two)
- that, for the 2004-2005 season, the quota for s120 licences to harm under the *National Parks and Wildlife Act 1974* be based on a estimated minimum population of Grey-Headed Flying-foxes of 320,000, as described in the Policy, based on 0.95% of the population and allocated to each DEC Region as outlined in Table Three in the following report
- the issue of continuing resourcing for the coordination of the National Count (previously through NSW DEC Biodiversity Management Unit) is referred to EPRD.

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1. Introduction

This report presents a state-wide summary of licensed activity over the 2003-2004 fruit-growing season under the *National Parks and Wildlife Act 1974* (NPW Act), under the *Policy and Procedures for the Mitigation of Commercial Crop Damage by Flying-Foxes* (the Policy), copy provided for information at Appendix One (NPWS 2001). The term 'flying-fox' in this report will refer to all three species of *Pteropus* found in NSW except where specified (see Appendix Three for Background).

Under the Policy, DEC advocates full exclusion netting as the only reliable method for protecting fruit crops. However, provisions were under an interim policy in 2001 for licences to be issued under s120 of the NPW Act to fruit growers harm a limited number of two species, Grey-headed Flying-foxes (GHFF) (then protected, now listed as vulnerable) and Little Red Flying-fox (protected), by gunshot only in circumstances where netting is not feasible. Under the Policy, farmers are encouraged to shoot to scare, however it is understood that incidental and direct harm may occur.

In May 2001, the NSW Scientific Committee made a Final Determination to list the GHFF as a vulnerable species under the *Threatened Species Conservation Act 1995*. This created a need to develop a new policy to contain provisions for both threatened and protected species. An interim three-year policy was prepared by the DEC in consultation with the NSW Flying-Fox Consultative Committee (FFCC) in July 2001 and an amended policy was adopted in August 2002.

The NSW Flying-Fox Consultative Committee (FFCC) also oversees research supported by DEC on management alternatives. A report from the most recent FFCC meeting on progress with this research is attached at Appendix Two.

Recovery planning for GHFF is now coordinated nationally and in NSW through the Environment Protection and Regulation Division of NSW DEC. A staff member from EP&RD is the Secretary for the FFCC (Kylie McClelland). Management of the Policy and review of licensing is conducted by the Wildlife Management and Licensing Unit (WMLU) of Parks and Wildlife Division (PWD) of DEC. Licences are issued by Regions within three Branches of PWD, Central, Northern and Southern.

An annual review of policies, licence applications and licences issued has been conducted by DEC each year from 2001. In previous years, this review has been published in extensive reports written by Wildlife Management Unit staff. These reports include a summary of data and an analysis of trends and comparison with previous years (NPWS 1999, 2000, 2001a, 2002).

Background information to the Policy and this report, including the licensing process and use of Flying-Fox Return Sheets (FFRS), is included in Appendix Three.

2. Review of Licences Issued 2003-2004

2.1 Licences Issued

A summary of the s120 licences issued under the Policy during the 2003/2004 fruit-growing season is provided at Tables One to Three.

It should be noted that although accurate information is provided on the number of licences issued by DEC and the number of flying-foxes allowed to be harmed, not all information requested from licensees has been supplied to WMLU. This means that full data could not be analysed for this report. Information yet to be received by WMLU includes that recorded on applications for a licence (such as the type and area of crop being damaged) and on the FFRS (FFRS have not been submitted or information has been omitted) Actual numbers harmed, from the FFRS, have not been provided for Northern Branch (Northern Rivers, North Coast, Mid-North Coast and Hunter Regions). These represent only 3 actual licences however and up to a maximum of 45 animals allowed to be harmed.

The numbers presented in 2.2 and Table 1-3 therefore represent an under-reporting of the actual number of flying-foxes harmed.

Hunter Region, originally allocated no licences, had to be given an allocation of 100 to accommodate unprecedented demand in the area, however only one licence to harm 20 animals was issued.

Central Coast Hunter Region also had an allocation increase early in the season from an original of 923 to a final of 1323, due to increased demand. But again, the Region did not use up all its allocation, as can be seen from Table One.

In contrast Sydney North did use all its allocation of 850.

It is not clear from information provided by Sydney and North Coast Regions but it appears that both Regions did not issue any licences over the season.

The 2003 – 2004 season for reporting purposes began in September 2003 and ended in June 2004.

A total of 53 orchardists were licensed under s120 to harm GHFF in 2003-2004 over 9 Regions of DEC (Northern Branch – Northern Rivers, North Coast, Mid-North Coast/Hunter; Central Branch – Central Coast Hunter, Sydney North, Sydney, Sydney South, Blue Mountains; Southern Branch – South Coast).

There were no licences issued to harm Little Red or Black Flying-foxes in 2003-2004.

14 orchardists sought a variation to harm additional flying-foxes, 3 of these requested a second variation (2 in the Central Coast Hunter Region and 1 in the Sydney South) and one of these (Central Coast Hunter) requested a third variation to harm additional flying-foxes.

2.2 Flying-foxes Harmed

As previously discussed, No information has been provided to the WMLU for three licensees. The numbers below and Table 1-3 therefore represent an under-reporting of the actual number of flying-foxes harmed.

The total number of flying foxes allowed to be harmed in NSW under a s120 licence over the 2003-2004 fruit-growing season under the total of 71 licences (53 licensees and 18 variations) was **2316**.

The actual number reported as being harmed was **1391** animals, all of which were GHFF.

An estimate of the maximum number of GHFF that could have actually been harmed can be made using the maximum number allowed to be harmed from data provided for Hunter (up to 15) and Northern Rivers (up to 30) licences. Thus, the maximum that could have been actually harmed is therefore estimated as 1391 plus 45, ie **1436**.

Sydney North Region (Central Branch) issued half (26) of the total number of licences issued across the state, accounting for 37% (850 of 2316) of the total number of animals authorised to be harmed State-wide.

2.3 Affected Crops

The s120 licence application form requests information on the area of fruit crops potentially vulnerable to flying-fox damage and on the area actually damaged.

Crops reported being damaged included stone fruit and pome fruit; peaches, plums, nectarines, loquats, apples, plums, persimmons and cherries.

Areas of damage ranged from 0.5 – 23.5 ha of crop, average crop size 395.6 ha and average size of crop damage 219 ha.

2.4 Flying-Fox Record Sheet (FFRS)

From data provided to Wildlife Management Unit, approximately 60% of FFRS were returned, although the number actually returned to Regional offices may be higher.

Only GHFF were recorded as being harmed.

The earliest licence issued was on 4 September 2003 by Sydney North Region to a stone fruit grower and the latest licence or variation to a licence was issued on 5 March 2004 by Blue Mountains Region to a pome and stone fruit grower.

2.5 Legal Action

No legal action relating to the licensing of flying-foxes was taken against the DEC during the 2003-2004 season. There was also no action taken against a member of the public.

2.6 Allocation for 2004-2005

As recommended at the 2004 Grey-headed Flying-fox National Workshop and in-line with the three-year national approach agreed in June 2003 at a national flying-fox workshop, NSW will again allocate 0.95% of the agreed national total of 1.5% of the estimated GHFF population of 320,000 (as outlined in NPWS 2003). This follows the precautionary approach detailed in the Policy (see Section 6 of the Policy at Appendix One). The allocation to each region of the state-wide quota of 2432 is based on the total number of flying-foxes allowed to be harmed in the previous season. The number of flying-foxes allowed to be harmed in the 2003-2004 season by each Region is presented in Table Three.

The total number allowed to be harmed in 2003-2004 was 2932, 500 over the initial quota, with Hunter/Mid North Coast and Central Coast Hunter requiring more than originally allocated. The percentage of the state-wide total allowed to be harmed (2331) by each Region is calculated and this percentage then used to allocate the total quota of 2432 animals. The results are presented in the last column of Table Three, being the proposed allocation of quota for the 2004-2005 season.

Table One: Number of Flying-foxes harmed

DEC Directorate	Region	Allocation at Start of 2003-04 Season	Allocation at End of 2003-04 Season Following Revisions	Total Number FF Actually Licensed to be Harmed (where data provided*)	Unused Allocation	Actual No. Harmed*
Northern	Northern Rivers	97	97	15	82	Data not provided (up to max of 15)
Northern	North Coast	12	12	0	12	Data not provided (up to max 0)
Northern	Hunter/Mid-North Coast	0	100	30	70	Data not provided (up to max 30)
Central	Central Coast Hunter	923	1323	1000	323	542
Central	Sydney North	850	850	850	0	606
Central	Sydney	20	20	0	20	Data not provided (up to max 0)
Central	Sydney South	389	389	374	15	228
Central	Blue Mountains	121	121	62	59	15
Southern	South Coast	20	20	0	20	0
	TOTAL	2432	2932	2331	601	1391

*information not currently available to WMLU for 3 licensees.

Table Two: Number of Licences to Harm Actually Issued By End 2003-2004 Season
(Where data has been provided to Coordinator Wildlife Management)

DEC Directorate	Region	No. Licences Issued	No. Variations including 2 nd and 3rd	No. FF Record Sheets [#] Returned	No. FF Record Sheets Outstanding
Northern	Northern Rivers	2	Data not provided	Data not provided	Data not provided
Northern	North Coast	0	Data not provided	Data not provided	Data not provided
Northern	Hunter/Mid-North Coast	1	0	0	1
Central	Central Coast Hunter	12	9	10	11
Central	Sydney North	25 not including 1 cancelled	5	24	5
Central	Sydney	0	Data not provided	Data not provided	Data not provided
Central	Sydney South	7	4	7	3
Central	Blue Mountains	6	0	2	4
Southern	South Coast	0	0	0	0
Total	TOTAL	53	18	43	24

[#] includes record sheets for variations

Table Three: Proposed Allocation of State Quota for 2004-2005 Season

DEC Directorate	Region	Allocation at Start of 2003-04 Season	Allocation at End of 2003-04 Season Following Revisions	Total Number FF Actually Licensed to be Harmed (where data provided*)	Percentage of State-wide Total (2331)	Proposed Number of Flying-foxes to be Harmed for 2004-05
Northern	Northern Rivers	97	97	15	0.64	16
Northern	North Coast	12	12	0	0	0
Northern	Hunter/Mid-North Coast	0	100	30	1.29	31
Central	Central Coast Hunter	923	1323	1000	42.9	1043
Central	Sydney North	850	850	850	36.46	887
Central	Sydney	20	20	0	0	0
Central	Sydney South	389	389	374	16.04	390
Central	Blue Mountains	121	121	62	2.66	65
Southern	South Coast	20	20	0	0	0
Total	TOTAL	2432	2932	2331	100	2432

3 Annual GHFF Count

The following information has been provided from the FFCC meeting May 2004.

3.1 2003 Count

A National Count of Grey-headed Flying-foxes *Pteropus poliocephalus* (GHFF) was conducted on 12 and 13 April 2003, the ninth count since July 1998.

The aims of the National Count are to monitor the relative distribution of GHFF and produce a population estimate during 2002/2003, to standardise counting methods throughout the species' range by introducing exit counts in Queensland, and to generate data for assessments of error.

An organisational framework for future counts in Queensland was established and the number of camp locations known to the program was increased by 70%. The level of volunteer expertise in Queensland remains low relative to other states and local groups will be encouraged to increase expertise by conducting exit counts independently of the National Count.

The relative distribution of GHFF in April 2003 was in keeping with patterns found in previous autumn surveys. The species occupied a large number of camps relative to winter (58 of 197 camps surveyed) and were dispersed throughout coastal areas of their range. Regional patterns of distribution in 2003 were consistent with previous autumn counts.

A low proportion of the population occupied camps in Queensland while a relatively high proportion was located south of the Hunter River and a particular concentration in East Gippsland.

Both the number of mixed species camps and the proportion of the total estimate of GHFF that occupied mixed species camps were greater in April 2003 than in previous autumn counts, although it remained significantly lower than in winter counts. This result is part of a trend associated with the recent southern expansion to the range of Black flying foxes.

The estimate of total population size from this count was 435,000, which was higher than previous estimates. It is not possible to interpret population trends from this result in the absence of information on counting error or natural fluctuations in population size. In addition, the increased survey effort and change in counting method in Queensland had an undefined influence on the estimate.

Dr Peggy Eby, member of the FFCC and co-ordinator of the National Count, recommended that the minimum population estimate derived from these counts should continue to be used as the basis of management decisions for GHFF, in that this precautionary approach takes into account the approximate nature of the data.

Dr Eby also recommended that annual counts continue to be conducted in April. Replicate counts should be used to generate data on counting error; and field trials should be conducted to improve methods for estimating percentages of species in shared camps and estimating population size in camps not suitable for exit counts.

3.2 2004 Count

Dr Eby provided the FFCC meeting in May with an overview on the April 2004 Grey-headed Flying-fox national count, report currently being written. She provided to the FFCC an initial national population estimate of 425,000 individuals.

No flowering event was observed on the South Coast during April 2004, which is unique. Only two camps contained more than 30,000 individuals: more, consistently smaller camps were observed. A high proportion of the population was found south of the Hunter, a consistent trend observed in autumn. Grey-headed Flying-foxes are increasing their use of metropolitan areas as refuges. There was a 30% increase in the number of camps being used this year, with a sudden increase in the number of small camps (1-5,000 individuals); most camps had less than 500 individuals. The Black Flying-fox's distribution continues to move south, resulting in more Grey-headed Flying-foxes having to share roosting and foraging resources with the Black Flying-foxes.

Ninety per cent of changes in population estimates made in April can be attributed to the percentage of females with young (pre-weaning measured in January). This potentially masks the population trend for the adult population. A count undertaken between September and December might provide a better idea of what the trends for the adult population are. Discussion followed on the need for longer-term collection of data to obtain a proper idea of what is happening to the population.

Dr Eby announced her retirement from coordinating the national counts. The NSW FFCC thanked Dr Eby for her coordination of the previous 10 national counts.

3.3 Resourcing Coordination of the Count

Resourcing for the coordination of the National Count has in previous years been through NSW DEC Biodiversity Management Unit. The Threatened Species part of this Unit now resides in EP&RD so it is appropriate that recommendations regarding continued resourcing of the count are made through EP&RD rather than PWD.

4 Developments in Non-lethal Deterrents

The NSW Flying-fox Consultative Committee (FFCC) was established in August 2001 to advise and assist with the development of policy and strategies relevant to the management of flying foxes in NSW. The Committee met in May 2004 and a report from this meeting on the results of research into alternative management techniques is presented at Appendix Two.

5 References

NPWS (1999). Review of the implementation of the *NPWS Policy on Flying-fox and Mitigation of Commercial Crop Damage*, 1998-99 fruit growing season. NSW NPWS, Hurstville, NSW.

NPWS (2000). Review of the implementation of the *NPWS Policy on Flying-fox and Mitigation of Commercial Crop Damage*, 1990-2000 fruit growing season. NSW NPWS, Hurstville, NSW.

NPWS (2001). NPWS policy and procedures for the mitigation of commercial crop damage by Flying-foxes. NSW NPWS.

NPWS (2001a). Review of the implementation of the *NPWS Policy on Flying-fox and Mitigation of Commercial Crop Damage*, 1990-2000 fruit growing season. NSW NPWS, Hurstville, NSW.

NPWS (2002). Annual review of the NPWS policy on flying-fox and mitigation of commercial crop damage for the 2001-2002 fruit growing season. NSW NPWS, Hurstville, NSW.

Appendix One: Copy of the DEC Policy and Procedures for the Mitigation of Commercial Crop Damage by Flying-foxes,.

Acknowledgement

This policy has been prepared by the former NPWS Biodiversity Research and Management Division (now DEC) in consultation with the NSW Flying-fox Consultative Committee and DEC Regional Staff.

Introduction

Crop damage by flying-foxes is an important and ongoing problem for some fruit growers in NSW. Although flying-foxes feed mainly on the fruit, blossoms and nectar of native vegetation, they may seek out alternative food resources such as commercial and domestic fruit. Damage occurs when flying-foxes feed on fruit and blossoms in these orchards and includes damage to tree limbs, foliage and fruiting branches as well as to fruit and buds. Crops typically affected in NSW include stone fruit, mangoes, lychees, pome fruit, pawpaw, coffee and bananas.

Three species of flying-fox occur in NSW; the Black Flying-fox (*Pteropus alecto*), the Grey-headed Flying-fox (*P. poliocephalus*) and the Little Red Flying-fox (*P. scapulatus*). The term “flying-foxes” will be used to refer to all three species collectively in this policy, except where specified. While all three species will forage in fruit crops, the Grey-headed Flying-fox is the species most often implicated by farmers.

A number of methods have been employed by farmers to deter flying-foxes and reduce damage to fruit crops, however the most consistently used and widespread technique has been to shoot flying-foxes. This activity went unregulated until 1986 when flying-foxes became protected under NSW legislation. After that time flying-foxes could only be legally harmed where a farmer held a valid licence for this activity issued by the former NSW National Parks and Wildlife Service (NPWS) under s121 (Occupier’s licence) or s120 (General licence) of the *National Parks and Wildlife Act 1974* (NPW Act). In 1995 the Black Flying-fox was listed as a vulnerable species under the *Threatened Species Conservation Act 1995* (TSC Act). Section 121 (3) of the NPW Act provides that a s121 (Occupier’s) licence shall not be issued to authorise the harming of a threatened species. Accordingly, licences were no longer issued to harm this species.

After a brief moratorium on the issue of all damage mitigation licences for flying-foxes in 1997, the former NPWS developed and implemented a Service policy on the mitigation of commercial crop damage by flying-foxes in 1998. The policy advocated the use of full exclusion netting as the only reliable means to avoid crop damage by flying-foxes. However, provisions were made for licences to be issued under s121 of the NPW Act to harm a limited number of the two protected species, Grey-headed and Little Red Flying-fox, by gunshot only in circumstances where netting was not feasible. Under this policy, farmers were encouraged to shoot to scare, however it was understood that incidental and direct harm may occur through this practice. An annual review of this policy, licence applications and licences issued has been conducted by DEC to assess and amend the policy where necessary and to develop the NPWS’s understanding of flying-fox distribution and the impact of licensing on both the farming community and the flying-fox population in NSW.

In May 2001 the NSW Scientific Committee made a Final Determination to list the Grey-headed Flying-fox as a vulnerable species under the TSC Act. This created a

need to develop a new policy, which contained provisions for both threatened and protected species. An interim three-year policy was prepared by the DEC in consultation with the NSW Flying-Fox Consultative Committee (FFCC) in July 2001.

Scope

This policy contains the DEC position and operational procedures for the management of flying-foxes in commercial fruit crops. It is one component of a broader conservation and management strategy on flying-foxes being developed. This interim policy has been developed in consultation with relevant DEC staff and the NSW Flying-fox Consultative Committee (FFCC) and will replace all previous DEC policies. The operational elements of this new policy will be reviewed annually in consultation with the NSW FFCC with a complete assessment to be undertaken at the completion of the 2003-2004 fruit-growing season.

Role and Responsibilities

The Director General, DEC has statutory responsibility for the protection, conservation and management of native wildlife in NSW under provisions of the NPW Act. The Director General, DEC also has specific responsibility for the protection and recovery of threatened species, populations and ecological communities listed on the Schedules of the TSC Act.

Management Strategies

The DEC advocates that full exclusion netting is the only reliable method for protecting fruit crops from damage by flying-foxes and welcomes opportunities to work together with NSW Agriculture to present the value of full exclusion netting as a non-lethal crop protection mechanism. The DEC acknowledges that, in some circumstances (e.g. orchard topography), this technique may not always be practicable. Where such restrictions on exclusion netting occur, the DEC supports NSW Agriculture and industry in investigations into alternate non-lethal damage prevention methods (See Section 9).

A number of alternative strategies have been trialled with varying success rates including strobe lights, noise, scare guns and patrolling crops. It is recommended that using a variety of methods in crop management may be useful where exclusion nets are not feasible. DEC supports the investigation and trialling of alternative non-lethal methods to deter flying-foxes and protect crops.

As a final alternative, the DEC will issue licences to property owners to harm a limited number of flying-foxes by shooting only. These licences are issued with the understanding that the farmer will shoot to scare and that some incidental harm is likely to result from this activity. That harm is not to exceed the specified limit of the licence.

Under the previous policy licences were issued under s121 (Occupier's Licence) of the NPW Act. However, subsequent to the listing of the GHFF, such licences can no longer be issued as a s121 licence may not be issued for a threatened species. Section 91 of the TSC Act states that a licence may be issued authorising a person to take action that is likely to result in the harm of a threatened species under s120 of the NPW Act where there is a threat to life or property. Damage to commercial fruit crops is regarded as constituting a threat to property where damage can be

established and where it is likely that further damage will occur if no protective measures are taken. All three species of flying-fox that occur in NSW are implicated in fruit crop damage and all three may be present at a crop at any one time. It would therefore not be feasible to have a dual licensing systems under s121 for protected species and s120 for threatened species. Therefore, a General licence will be issued under s120 of the NPW Act to harm Black, Grey-headed and/or Little Red Flying-foxes based on the procedures outlined below.

Procedures for the issuing of licences by DEC for the purpose of crop damage mitigation

Specialised application and licence forms are provided to facilitate the evaluation of applications and more expressly identify the rights and obligations of the licensee. This should improve licensing understanding, and deter licensees from breaching licence conditions.

Application

An application for a s120 General licence to harm flying-foxes in NSW must be completed and received by the local Regional or Area Office of DEC (see Appendix 1 – Form 1.0). Only one application per property is required for each licence.

All persons that might act as shooters on a property must be identified in the application and will be included on the licence, if approved. The licence will cover only those individuals identified on the application form and on the licence.

Information in the application form is vital to DEC to assess and review this policy and to document the impact of flying-foxes on commercial fruit crops. DEC officers issuing the licence must ensure that the application is fully completed before granting approval.

Inspection

An inspection of the affected property may be undertaken to confirm that flying-foxes are active and causing damage. The inspection will include pre-licence confirmation of the estimate of crop damage given on the application form above. Such inspections should take place, wherever possible, within 24 hours of the request for a licence under this policy. A complete application must always be submitted to the DEC Office prior to the issue of a licence. It is then the responsibility of the Region/Area to determine when an inspection is required to confirm details in the application form and suitable licence conditions.

A Region/Area may maintain a register of local growers, noting history with flying-foxes and previously held licences to streamline this process. This information is critical to the licensing procedure as these licences are issued under the provision that flying-foxes pose a threat to property (see section 4 above). The DEC must have relevant evidence that the threat is real, e.g. evidence of damage or recorded history of damage to the property or crop in the area.

Issue of Licence

A s120 General licence to harm flying-foxes will incur a fee of \$30.00. An additional fee of \$10.00 may be charged for any changes or additions to the licences that are made at the request of the licensee (e.g. inclusion of more than one shooter to a licence after the licence has been issued or change to the number of animals permitted to be harmed). Thus, only one licence will be required per property.

Subsequent to the recommendation of the inspecting DEC officer, a Section 120 General licence to harm a limited number of flying-foxes may be issued to the applicant (see Appendix 1 – Form 2.0). Where Grey-headed or Black flying-foxes are included in the licence, it must be authorised by the Area Manager.

It is up to the DEC Regional office's discretion to determine the number of flying-foxes that may be harmed under an individual licence. However, a licence may be issued for no more than 50 animals. Regional quotas have been established for Grey-headed Flying-foxes only (See section 6 on Regional Quotas below).

All licences should be issued to expire either at the end of the month of expected harvest completion, or no later than 1 June, to improve administrative efficiency for the DEC and the growers. A Region may choose a relevant date based on the crops that are grown in that area. For example, Regions, in Central Directorate may choose an expiry date of 1 March, as licences are rarely issued after January in most Areas. However all licences must expire no later than 1 June so that information may be received by the Head Office and incorporated into an annual policy review.

The issue of provisional licences (i.e. issued before damage has occurred) is not recommended as they will be problematic to enforce and regulate. Additionally, DEC is developing a proactive process under Property Management Plans (PMP) (see section 7) whereby farmers may develop a fuller and long term property management strategy. Farmers wishing to obtain provisional licences should be encouraged to submit PMPs wherever possible. However, should a Region decide to issue provisional licences independent of the PMP program, several issues must be addressed. As noted above in Section 5.2, the DEC will need to establish that there is a real threat to property. This would include a clear record of the history of damage to the property or similar crops in the vicinity and relevant information on flying-fox presence in the Area. As there is a limited quota of GHFF for each Region, it is recommended that provisional licences be issued for a very limited number of animals, i.e. 1 or 2, so that a farmer may be covered immediately should his property be affected and can shoot scouts, yet leave the majority of the Region's quota available. Such licensees must be informed that the licence is only valid for harm to the limited number of animals (i.e. 1 or 2) and they must notify the issuing DEC Office as soon as the licence has been activated so that a further allocation of animals may be added to the original terms of the licence. This will constitute a licence variation (see Section 5.6 below).

Bananas grow year round and there may be a need for licences to cover the time period between 1 June and 1 September. All licences should still expire on 1 June and growers asked to apply for a new licence which will be applicable for the following fruit growing season, when necessary. This situation will be assessed as it arises.

The licensee should be encouraged to shoot to scare where possible and must be made aware of all conditions attached to the licence, including the number and species of flying-fox permitted to be harmed and the need for completion and return of the Flying-fox Record Sheet (FFRS) provided by DEC as detailed on the licence (see Section 5.4, Appendix 1 – Form 3.0). **Failure to comply with any conditions of the licence will render the licensee liable to prosecution, or the issue of an infringement notice.** In extreme circumstances a licence may be revoked, however this will require the approval of the Regional Manager.

Any breach of the conditions of a s120 General licence to harm flying-foxes, for example through failure to submit the accurately completed FFRS, will be regarded

as an important matter and taken into account in the consideration of any future licence application. An applicant may be requested to demonstrate just cause as to why a new licence should be issued under these circumstances.

Flying-fox Record Sheet (FFRS)

Completion and submission of FFRSs to the DEC is critical to the Service's ability to maintain a record of the harm to flying-foxes throughout the fruit growing season and to assess the impact of this licensing system on the Grey-headed and Black Flying-fox. This information may be requested from the DEC throughout the year, thus it is important that up to date information be available. Changes to this policy have included extending all licences to cover the entire fruit growing season in an effort to reduce DEC officer time spent administering the system. For this reason, growers will be requested to return an up to date copy of their FFRS at several times during the season. Licence condition number 5 should stipulate that the FFRS must be filled in by the licensee within 24 hours of any shooting event, be available for inspection at any time by an DEC officer and a complete and up to date copy returned to the DEC office of issue on the 1 January, 1 March and 1 June, regardless of whether any animals have been harmed in that interim period (Appendix 1 – Form 2.0). These FFRSs should be maintained on file by the Regional offices and relevant information included in the database described in Section 6 for submission to the Coordinator Wildlife Management (CWM), Head Office on the last day of each month. It is recommended that each Region nominate one individual that will handle this filing system and database and send in monthly reports to the CWM.

A reminder notice should be sent out to all licensees whose FFRS have not been received at the appropriate DEC office by the required date. This notice should note that the licensee is in breach of a condition on their licence and is liable to prosecution unless they comply immediately (See appendix 1- Form 4.0 for a sample letter). Infringement notices may be issued to licensees in breach of licence conditions at the discretion of the Regional Office. Failure to comply with conditions should be noted on the licensee's file and should be taken into consideration in the assessment of future licence applications.

Delegation

Regional Managers have the delegated power to authorise officers of the Service to issue a s120 General licence. It is up to the Regional Manager to determine which officers are suitable for this delegation and to issue the appropriate authorisation, keeping in mind that these licences may need to be issued on a short timeframe (i.e. 24 hours). Any authorisation must identify the specific nature of s120 General licence that may be issued by the authorised officer, thus the authorisation should not give blanket approval for officers to issue s120 General licences for any purpose. (An example authorisation form is provided in Appendix 1 - Form 5). It is recommended that, where a s120 licence is to be issued for harm to Grey-headed or Black Flying-foxes, the delegation be given to the Area Manager level to ensure that due care is taken in adhering to the Regional quotas. The authorisation should, where appropriate, also empower the relevant service officer to attach conditions, vary or remove such conditions to a licence.

Variation of Licences

Where the terms of a licence have been fulfilled, that is, the number of animals harmed is that as specified on the licence (maximum of 50 animals), and the licensee determines that damage from flying-foxes is still occurring, the licensee may seek to

have the licence varied. Any requests to vary a licence must be received in writing at the Office that issued the original licence and should include clear reasons why the licence should be varied and a completed and accurate FFRS. As per s133 (3) of the NPW Act, "an authorised officer may, by notice in writing served on the holder of a licence or certificate ... vary or remove any conditions or restrictions attached by an authorised officer to the licence...". Initial notification of the need to vary the original terms of a licence may be done via the phone. This verbal notification must, however, be accompanied by a written request before approval can be given to vary the original terms of a licence. An additional fee of \$10 may be charged for any changes or additions to a licence that are made at the request of the licensee.

A property inspection should be conducted by the DEC and, where possible, NSW Agriculture should be requested to inspect the property and provide a report to NPWS. It is up to the discretion of the Regional Office to vary the licence according to the request, e.g. to increase the number of flying-foxes permitted to be harmed, keeping in mind that any change must be recorded in the database and allotment accounted for in the Regional quota. The above guidelines (Section 5.3 and 5.4) for issuing the original licence apply to any variation, e.g. a variation may be for a maximum of a further 50 animals. The DEC must notify the licensee in writing of the changes to the licence and include a new FFRS (see proforma Appendix 1- Form 6).

Regional Quotas- Grey-headed Flying-fox (GHFF)

Issuing a s120 General licence does not address the issue of cumulative impact on flying-fox populations either on a Regional or State-wide level. This is of particular concern for the GHFF as the majority of the Australian population of this species can be found in NSW during some seasons. Martin and McIlwee (in press) note that an imposed mortality of as low as 10%, in addition to natural mortality, will lead to the rapid decline of even a large population. To ensure that the total impact of all licences issued in NSW does not constitute a serious threat to the long term survival of this species, the DEC will exercise the precautionary principle and establish a maximum State-wide quota of 0.95% of the most recent minimum population estimate provided by the Australasian Bat Society for the GHFF for this season. (Note: This quota applies to the GHFF only, not to Black or Little Red Flying-foxes).

A portion of this quota (20%) will be kept in reserve and the remaining 80% divided amongst the Regional Offices that have issued licences in the past 3 years. The quota for each Region will be allocated based on the proportion of licences issued in the previous season and numbers of flying-foxes permitted to be harmed in those licences. All Regions will be advised of the State-wide quota for the season and the division amongst Regions prior to the beginning of the fruit growing season.

The current population estimate of GHFF in Eastern Australia is 320,000-400,000 (P. Eby, pers. comm). This estimate was accepted by the NSW Scientific Committee in reviewing the evidence placed before it for its determination of the GHFF as a vulnerable species. The total State-wide quota will be 0.95% of the minimum estimate, or 3,040 for the 2002/03 fruit season. 20% of that amount will be maintained in reserve (608), leaving a total of 2,432 to be divided amongst the Regions (See Table 1 for Regional allocations). This quota will be assessed during the annual review of the Policy and/or when further information is available on current population estimates.

Each Region will be responsible for dividing its allocated quota amongst its Areas, maintaining accurate and up to date records on applications received, licences

issued and variation to licences to ensure that the quota is not exceeded throughout the season. Records should be entered into a spreadsheet format (Appendix 2) and a copy of this database forwarded to the CWM at the end of each month. As noted in Section 5.4 above, it is recommended that one individual (e.g. the Regional Operations Coordinator) be nominated to handle the quota and licence information for the Region. This will eliminate confusion over the allocated quota and ensure a minimum number of contact points to collect information on the licensing system Statewide.

Should a Region issue licences to the extent of its quota before the end of the season and still be receiving further applications, the Region can make an application to the CWM, Head Office for a further allocation from the number held in reserve.

There are several Regions that have not been issued with quotas, yet are within the home range of the GHFF. The 20% reserve held by the CWM will be apportioned so that there will be a provisional number of GHFF available to these Regions. Where a Region that does not have an allocated quota receives a valid application, that Region can anticipate a provisional quota of 20 GHFF to expedite the licensing process for that application. The CWM must be notified as soon as practicable so that the need for the provisional quota can be recorded and assessment made of a further quota allocation to that Region. In the 2002/03 season, this provisional system will apply to Mid North Coast Region and Northern Tablelands Region.

Table 1 Allocation of Regional quotas for harm to Grey-headed Flying-foxes in the 2004/05 season. Allocation is based on the proportion of the statewide total of Grey-headed Flying-foxes permitted to be harmed per Region in the previous season.

Directorate	Region	Allocation (2432)
Northern	Northern Rivers	16
Northern	North Coast	0
Northern	Hunter/Mid North Coast	31
Central	Central Coast Hunter	1043
Central	Sydney North	887
Central	Sydney	0
Central	Sydney South	390
Central	Blue Mountains	65
Southern	South Coast	0
TOTAL		2432

Total allocation for 2004/05 is 2432 GHFF ie 0.95% of minimum population estimate (320,000) minus 20% reserve

Contingency Planning

In the event that a Region approaches its allotted quota and is still receiving licence applications, that Region should contact the CWM, BRMD to receive a further allocation from the 20% reserve of the total quota. Before issuing any further allotments the CWM will investigate the status of Regional quotas across the State to determine the potential needs of other Regions, including likelihood of unallocated Regional quotas. The CWM will take this information into consideration before making any further allocations to ensure that all Regions receive fair allotments.

Where the CWM allocates the reserve 20% and Regions continue to receive licence applications, a submission will be made to the Director-General (DG), DEC requesting an increase of the established quota of GHFF for that season. This submission will contain full details of the licence system, allocations to date, extent and magnitude of the problem and perceived end of the growing season. It will then be at the discretion of the DG to permit a further allocation of GHFF to be included in the quota system for that season only. The submission for an increase of the GHFF quota will be made by the CWM with sufficient time to process the request to ensure continuous operation of the quota system. The allocation of licences and the number of flying-foxes permitted to be harmed under those licences, and the productivity and stage of the season will drive the need to review the quota.

Property Management Plans

In addition to the licensing system discussed above, the DEC is exploring the use of Property Management Plans (PMP) as an option for farmers. Section 91(5) of the TSC Act states "The Director-General may, for the purposes of this Act, approve of a property management plan for land prepared by a landholder. Any action identified in, and carried out in accordance with, a property management plan so approved by the Director-General does not require a licence under this Part even if the action is, or is of a class of actions, that may, in accordance with the regulations, be carried out only under the authority of a licence under this Part."

The DEC encourages landholders to prepare PMPs to facilitate an improved management and decision making process. PMPs must be prepared in accordance with advice from the DEC and be approved to be valid. A pilot program is being conducted with several farmers to determine the likelihood of exercising this option. A separate document detailing procedural guidelines for the development and approval of PMPs is being prepared and will be included as an addendum to this policy upon endorsement.

Law Enforcement program by DEC for the purpose of ensuring compliance with licence conditions

The law enforcement program should be determined on a Regional basis and may include a range of regulatory procedures such as those outlined below.

Pre-licence property inspections must be conducted by an appropriately experienced DEC officer, when undertaken.

Each office issuing licences will maintain a register recording details of all calls/complaints relating to shooting or suspected shooting of flying-foxes.

All DEC response/inspection/patrols undertaken by Service staff must be recorded on a standard DEC Flying-fox – Law Enforcement Report form (see Appendix 1 – Form 5.0).

Service officers have the power, to enter premises where they have a reasonable suspicion under s164 (1) (a) of the NPW Act or in order to inspect the presence or condition of threatened species. Where a licensee obstructs or hinders the officer then they commit an offence. A file note will be made detailing the incident and consideration will be given to the issuing of an infringement notice. This refusal

should be considered in the course of determining any future s120 licence applications.

The local Police Stations should be provided with information on the DEC policy on crop damage mitigation, the issue of licences and implications for compliance. Where possible, the support of the local Police in assisting in compliance should be sought. For example, the Police may be encouraged to contact DEC when they receive reports of shooting to determine whether the resident has a licence or not and/or the Police may join DEC on random compliance efforts. This liaison should be developed by the Local Regional or Area office and relevant Police station, however, the Investigation Unit of the Legal Services Directorate may be contacted to provide advice and information on police powers under DEC legislation.

Alleged illegal shooting should be investigated and, where appropriate, DEC should seek support from local Police. Properly completed offence reports with all accompanying information relating to illegal shooting or breach of licence conditions should be forwarded to the Senior Legal Officer (Legal Operations Unit).

Monitoring

All DEC Regions are to provide copies of the spreadsheet information on applications and issue of licences outlined in Appendix 2 to the CWM, BRMD on a monthly basis (to be received in HO on the first day of each month). This information is required so that State-wide reports can be prepared at short notice throughout the fruit growing season and after the completion of the season. Regional offices may be requested to send in copies of all applications, licences issued, completed flying-fox record sheets, and law enforcement reports to the CWM, BRMD at the end of the season to finalise the State-wide policy review.

In addition, all DEC Regions are to provide a summary spreadsheet at the end of the season compiling all relevant licensing data including data provided on the licence application and FFRS. A standard template will be provided at the beginning of the season.

DEC may seek the assistance of local stakeholder groups to assess and monitor flying-fox populations at known roost sites during the fruit-growing season.

Alternate Damage Prevention Methods

The Service acknowledges the work done by NSW Agriculture to date and seeks to assist NSW Agriculture wherever possible in its ongoing work with fruit growers to investigate and promote non-lethal crop protection methods. The DEC will provide information to farmers, where available, on alternative techniques trialled in Australia. The DEC may participate, where possible, in planning research programs through the NSW FFCC.

Research on Flying-foxes

The Service's primary role in flying-fox research is the provision of baseline biological and ecological information. An aim of such research is the provision of information, which can ultimately inform decision-making processes for conservation and management purposes.

DEC will provide technical advice to NSW Agriculture and stakeholder groups wherever possible.

The Service will advocate and facilitate the involvement of tertiary institutions and stakeholder groups in such research.

Licensees should be asked whether they are willing to participate in research on flying-foxes to assist in developing our understanding of flying-fox ecology and/or the development of alternative non lethal damage mitigation measures. Growers may assist through a variety of actions requiring various levels of commitment and participation. For example:

- The FFRS includes several “optional” categories. Licensees should be advised that this information does not need to be supplied, but will assist in DEC conservation and management strategies. This information will not be used against the licensee and should only be included where the licensee can supply accurate information.
- Researchers have requested access to dead flying-foxes where possible to carry out genetic analysis and collect data for population parameter assessments. Licensees may assist by notifying DEC that they are willing for researchers to visit their property to collect dead animals and to be contacted directly by the researchers to make these arrangements.
- A number of flying-foxes carry thumb bands that were attached on the animal’s wing as part of a release program. Should a licensee shoot a banded animal, it is important that correct band information along with the fate of the animal is provided to the Australian Bird and Bat Banding Scheme (ABBS) of Environment Australia. This information is important in assessing population parameters such as life span and range patterns. When a banded animal has been found, the licensee may either send the following information directly to the ABBS at GPO Box 8, Canberra ACT 2601 or contact DEC to collect the animal and band. Where DEC is contacted, the responding officer must send the following information to the ABBS. The ABBS would like the following:
 - The band, where possible, removed from the animal and attached to a piece of cardboard, or at least the band number;
 - Date and location where the animal was sighted;
 - Fate of the animal; and
 - Any notes on the animal, e.g. other markings etc.
- Research trials may be used to test various non-lethal deterrents over the next few years. Licensees should be asked whether they would be willing to participate in trials.

Policy Review

This Policy will be reviewed annually in consultation with key stakeholders and a complete assessment and revision will be conducted at the end of 3 years.

References

Martin, L. and McIlwee, A. In press. On the intrinsic capacity for increase of Australian flying foxes (*Pteropus spp*, Megachiroptera). Australian Zoologist.

Appendix Two: Current Research

Foraging Habitat Project

The FFCC was provided with a presentation on the research project “Foraging Habitat: Ranking habitats of Grey-headed Flying-foxes and mapping spatial and temporal availability of preferred diet species” by Dr Eby, which she and Dr Brad Law of NSW State Forests are undertaking. The project is a desktop assessment to interpret existing data on Grey-headed Flying-fox (GHFF) foraging habitat in a way pertinent to recovery planning and habitat management, and is funded by the Commonwealth Department of the Environment and Heritage (DEH). The objectives of this project are:

1. to provide data on GHFF foraging habitat for use in recovery planning and habitat management using objective methods that are clearly defined;
2. to rank the diet plants of GHFF by preferential use;
3. to rank the significance to GHFF of feeding habitat;
4. to produce nectar maps and maps of ranked habitat for GHFF as GIS layers;
5. to identify spatial and temporal gaps in food availability for the GHFF; and
6. to make recommendations for habitat retention and tree planting programs that will assist with conservation of the GHFF and provide alternative food sources to commercial fruit crops across the geographical distribution of the species.

The project is assessing the foraging habitat in terms of native species only. It was raised that there is a need for a measure of GHFF reliance on exotic fruits also, which is outside the scope of this current research project.

Flying-fox Camp Characteristics Project

Lee Peacock (research student from the University of Sydney) provided to the FFCC an overview on the research project “Roost Preferences of the Grey-headed Flying-fox (Camp Site Characteristics)”, being undertaken as an Honours, Veterinary Science research project. The objectives of the project are:

1. To define the criteria used by GHFFs to select camps;
2. To explore the basis for the high fidelity GHFFs display towards camps;
3. To enable predictions to be made about potentially suitable camp sites for GHFFs; and
4. To make recommendations regarding the conservation and management of controversial GHFF camps.

The outcomes of this research project are:

1. A project report/thesis in the form of a manuscript suitable to be submitted to a peer reviewed journal, for submission to the DEC.
2. Information is gathered for input into the DEC Flying-fox Camp Management Policy, which is currently in preparation, or for input into the review of the Policy.
3. Information is gathered to guide flying-fox camp management, in particular the camps causing current and ongoing conflict (for example Royal Botanic Gardens Sydney, MacLean, Singleton).

This project will investigate flying-fox camps within the state of New South Wales, north of Canberra. A similar project is being conducted in Victoria, which will capture those flying-fox camps located in southern New South Wales. This project is funded

by a special grant from the Koala and Endangered Species Trust, and is to be completed by the end of October 2004.

Attitudinal survey on the Grey-headed Flying-fox

Guy Ballard provided to the FFCC an overview on the research project “Attitudinal survey of Growers and the Public regarding Grey-headed Flying-foxes”. This research project is funded by the Commonwealth DEH and by the NSW DEC, and is expected to be complete by the end of June 2004.

The specific aims of the research regarding fruit growers were to:

- Define the extent of damage being caused by flying-foxes (both actual and perceived and relative to damage caused by other factors);
- Quantify the uptake and extent of netting and gauge fruit growers’ perceptions of the efficacy of netting as a damage mitigation technique;
- Identify the use of other non-lethal methods used to protect crops and gauge fruit growers’ perceptions as to the efficacy of these techniques;
- Assess the reliance on shooting of flying-foxes and gauge fruit growers’ perceptions as to the efficacy of shooting as a damage mitigation technique;
- Understand fruit growers’ perceptions of management responsibilities for flying-foxes and the role they see for themselves; and
- Gauge fruit growers’ perceptions of flying-foxes.

The questions for the public survey related to backyard tree and fruit damage, rather than commercial crop damage.

Based on the number of responses, it was estimated the accuracy of responses was plus or minus 14% for growers. That is, the true ‘answer’ for each question, based on the 1102 growers contacted about the project, lies within plus or minus 14% of the result provided. Two thousand public participants within each of the three geographic zones sampled along the NSW coast were sent a copy of the questionnaire. Levels of return of the questionnaires from the public were much greater than that for the grower survey. A consistent geographic trend was observed for most of the questions asked of the public. That is, public within Zone 1 (Tweed Heads to approximately Grafton) were more familiar with and exposed to flying-foxes and the issues surrounding them, with a decline as one moves further south in the state.

Food Preference in Captive Grey-headed Flying-foxes

Praveen Gopalan (Honours research student at the University of Sydney) provided the FFCC with an overview of his Honours research project on food preferences in captive Grey-headed Flying-foxes (GHFF). While not being a research project for which the FFCC obtained funding, the results of this research project fed into the FFCC endorsed Decoy Feeding research project (see below). The research aimed to provide information on the food preferences of the GHFF, and on the nutrients that possibly drive such food preferences. The food trials examined whether there were differences between varieties of fruits grown as commercial crops, using fruits that had been stored (refrigerated). Bananas were preferred over Red Delicious Apples, which were preferred over Granny Smith Apples. No difference in preference was observed between mother-reared or hand-reared animals; however adults had clear preferences whereas juveniles didn’t. Only one native fruit was tested. An increase in preference with increasing protein content and with increasing sucrose content is suspected.

Decoy Feeding

Kevin MacFarlane (Masters research student at the University of Sydney) provided a presentation on the outcomes of his research on decoy feeding trials, funded by the Commonwealth DEH.

Following an unsuccessful pilot study in the Sydney Royal Botanic Gardens, and a survey of 12 orchardists to determine trends in orchard damage, a decoy feeding system was developed whereby plastic mesh onion/orange bags filled with fruit were strung high up in orchard windbreak trees.

It was observed that one animal may dominate each decoy feed bag, and also observed what appeared to be learnt behaviour of the decoy feeding system.

It appears that shooting activity may increase the level of damage sustained within an orchard: an animal disturbed (via shooting activity) while eating a piece of fruit would drop the fruit in fright, returning later for another piece due to its remaining hunger. (NB: final data analysis and written thesis does not reflect this initial observation)

There is a need to increase data collection to determine statistically significant results. It can be concluded, however, that the use of decoy feeding bags by flying-foxes appears to reduce the real damage to an orchard in that the amount of consumed decoy food would otherwise have been consumed from the orchard fruit.

Appendix Three: Background

Three species of flying-fox are known to occur in NSW. They are the Black Flying-fox (BFF) (*Pteropus alecto*) the Little Red Flying-fox (LRFF) (*Pteropus scapulatus*) and the Grey-headed Flying-fox (GHFF) (*Pteropus poliocephalus*.) All three species are protected under the NPW Act and the BFF and GHFF are listed as vulnerable species under the *Threatened Species Conservation Act 1995* (TSC Act). The Grey-headed Flying-fox was listed in 2001 as a vulnerable species under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

The term 'flying-fox' in this report will refer to all three species of *Pteropus* found in NSW except where specified.

The Wildlife Management Unit of the NSW National Parks and Wildlife Service was formerly responsible for managing the Policy. Regional offices of DEC issued licences and kept local data bases of licences issued and flying-fox return sheets returned by licensees. NSW NPWS is now part of DEC and wildlife management is now part of the Parks Service Division.

Licences can be issued under Section 120 of the NPW Act to harm a limited number of flying-foxes incidental to using gunshot to scare flying-foxes from fruit crops (a s120 licence). The majority of s120 licence applications are to harm GHFF as this is the species implicated in most cases of commercial fruit damage.

To be consistent with the legislation the term 'harm' has been used in this report. All flying-foxes harmed under license, however, were killed by shooting.

The DEC has established an annual total maximum of 3040 GHFF to be harmed, being 0.95% of the national GHFF population estimate of 320,000. Each DEC region is allocated a quota based on previous years' allocations.

Under the Policy, a DEC Area Office may issue a s120 licence to harm up to a maximum of 50 flying-foxes. Variations may be requested by an orchardist suffering on-going crop damage to harm additional flying-foxes up to a maximum of 50 per variation and subject to an inspection by DEC staff.

A condition of licences is completion of a Flying Fox Record Sheet (FFRS) recording the species and number of flying-fox harmed. The DEC has reported annually on this information since 1999 (NPWS 1999, 2000, 2001, 2002).

The issuing of s120 licences from Area Offices is now done from the Parks and Wildlife Division of DEC. The boundaries of some DEC Areas changed over the period as a result of the restructure of the former DEC into the new DEC; however the boundaries in the Parks and Wildlife Division have not changed. PW Division operational staff are divided into four Branches – Northern, Central, and Western Branch Southern.