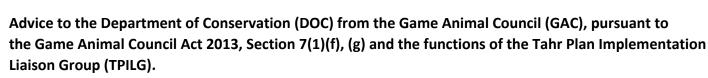


ADVICE TO THE DEPARTMENT OF CONSERVATION IN DEVELOPMENT OF THE TAHR CONTROL OPERATIONAL PLAN 2025-26



Development of the Tahr Control Operational Plan (TCOP) 2025-2026





The Game Animal Council's (GAC) mission statement is "Sustainable management of game animals and hunting for recreation, communities, commerce and conservation." Pursuant to that mission statement, we provide the following advice to guide compiling the Tahr Control Operational Plan 2025-2026.

Context

GAC TCOP advice is provided at three levels:

- 1. The strategic level, focused on principles and priorities
- 2. The management level, which includes advice on how control effort should be allocated across tahr management units
- 3. The future development level, which focuses on work that should be undertaken during the operational period to improve future management

The recommendations outlined are provided to support the 2025-2026 TCOP operational year only, as provided for by the TPILG Terms of Reference (Functions, 1: provide input, contributions and perspectives to be considered in the development of operational plans that give effect to the statutory plan). Further recommendations may be made as the year progresses, e.g., following receipt of the draft TCOP or other relevant information, and at the mid-point review.

Current ongoing relevant DOC and GAC projects are:

- o Vegetation and herbivore monitoring method development (DOC): Awaiting final report.
- o Tahr population demographic modelling project (DOC): commencement was proposed within the 2024-2025 TCOP.
- Hunter participation and motivation survey (GAC): Data collection will be completed in March 2025, with analysis later in 2025.

Principles and Priorities

Principle 1: Have regard to impending changes to the overall tahr management system.

The HTCP 1993 has never been implemented in its entirety, nor is full implementation of the HTCP advisable given recent advances in knowledge, resource use, science and technology. The 2025-2026 TCOP should recognise that (i) the HTCP is out of date, and (ii) the TCOP, in accordance with the purpose of Te Ara ki Mua, should strive to apply and trial sustainable adaptive management with the potential to improve tahr management in the long term. Adaptive management will require ongoing investment in science, and engagement with hunting sector and other informants, to identify places where tahr impacts are unacceptable and to design appropriate responses. The GAC acknowledges DOC's ongoing commitment to these activities.

Previous TCOPs, rightly, explicitly exclude issues beyond the scope of the HTCP, or planning and operational issues that would require changes to the HTCP. The GAC acknowledges that these are higher-level tahr management issues and any advice relating to these issues should be retained separately. However, the GAC considers that these issues, and the advice in relation to these issues, should be reviewed annually as part of the operational planning process to ascertain potential impacts or limitations on operational success, and to support operational planning that minimises negative impacts or circumvents limitations. In addition, this process may indicate when adaptations to the HTCP, review of the HTCP or where changes to other management provisions, e.g., access, should be pursued outside of the operational planning cycle.

Neither Te Mana o te Taiao Aotearoa – New Zealand Biodiversity Strategy 2020 nor Te Ara ki Mua was referred to within recent TCOPs. Given tahr are one of the few valued introduced species that have a management plan, albeit a dated one, and the HTCP is specifically mentioned in Te Ara ki Mua, it is surprising that DOC has not linked the TCOP with the objectives and pou of these current strategy and framework documents.

Future Development Recommendations 2025-2026

- Develop a working document that outlines issues and TPILG advice (to date) beyond the scope of the HTCP. The TCOP should refer to the contents of this document, specifying how operational design is formulated to circumvent limitations. Where changes to the HTCP or other management provisions, e.g., access, would be beneficial, this should be noted.
- ➤ Link the TCOP with Te Mana o te Taiao Aotearoa New Zealand Biodiversity Strategy 2020 and Te Ara Ki Mua objectives and pou.
- > The TPILG discussions on longer-term tahr management options should be concluded and a discussion document recommending potential changes produced.

Principle 2: Focus official control where it will have the greatest conservation benefit.

This principle requires effects-based tahr management, concentrating official control effort on locations where control provides the greatest conservation benefit, informed by science wherever possible. It is important to note that current impacts do not necessarily indicate significant potential future impacts because of lag effects and without up-to-date information on resident tahr populations and the response and resilience of the local environment to those populations. The relationship between tahr density and potential impact can be due to long-lasting effects from previously high populations, continued population reduction effort, potential range expansion, susceptibility of vegetation to tahr abundance, and the period required for environmental recovery. Disentangling these effects is a daunting task that is not adequately informed by existing research.

The GAC is encouraged by relatively high recent investment directed to preventing range expansion and removing populations outside the feral range, and the Department's acknowledgement that the removal of males through official control is not required to prevent further dispersal from inside the feral range. However, the GAC is concerned that there is currently no measure to determine whether official control (or the techniques used to undertake official control) of females and juveniles from areas near feral range boundaries is reducing the risk of dispersal. Disturbance events have been shown to alter habitat usage by matrilineal groups of other ungulate species overseas and there is a risk that official control, or the techniques being used, are causing behaviour changes that encourage rather than prevent dispersal.

For National Parks, recent TCOPs have noted that 'official control will be optimised to target breeding populations but all tahr encountered (including identifiable males) will be controlled.' The focus on female and juvenile populations aligns with GAC advice. However, identifiable males still being controlled when encountered likely reduces concerted action by non-government contributors, thus reducing long term efficiencies. Senior DOC policy staff have indicated that the removal of identifiable males from National Parks through official control is not legally required if recreational or commercial hunters removed these animals instead.

Recent TCOPs have noted that within management units other than MU4 'official control will target areas of highest tahr impacts or where control presents particular challenges (e.g. West Coast forest ecosystems)'. The GAC agrees that focusing official control on areas where control presents 'particular challenges' is a good approach and that ensuring official control techniques do not inadvertently increase environmental impacts or decrease the efficiency of future population management efforts are crucial considerations. However, highest tahr impacts are not necessarily equivalent to highest tahr abundance. Where impacts are present, but tahr populations have since been reduced to low levels, targeting by official control is an inefficient use of resources. The target should be reduction of current and future, not past, adverse effects of tahr.

The GAC considers that:

- Recent tahr abundance estimates are neither sufficiently robust nor location-specific enough to guide allocations of official control effort between or within management units.
- The relationship between tahr abundance and adverse vegetation impacts is poorly understood at both catchment and management unit levels.
- Tahr detection, detection of locations adversely affected by tahr, and tahr control do not need to occur in the same event.

 Consideration should be given to allocating some "official control" resources to detecting specific areas most in need of tahr control and identifying the most appropriate control method for each location.
- Diverting aerial monitoring and abundance-estimation resources into activities that could improve tahr vegetation impact assessments would be beneficial for future decision making by facilitating effects-based management.
- Rather than seeking to cover the whole tahr range, control should be focused on locations where tahr are:
 - (i) outside the feral range
 - (ii) approaching feral range boundaries outside management units
 - (iii) likely to cause the most significant adverse environmental effects
 - (iv) in high concentrations, and
 - (v) where hunter activity is lowest.
- Tahr population control should be based on understanding of tahr population dynamics and reproductive potential.
 - Outside the feral range and within National Parks all females should be the focus of official control effort as they are the reproductive potential of the population. Focused control of females maximises long-term conservation benefits and reduces required future control.
 - o <u>Inside the feral range</u> high concentrations of adult females should be the focus of control as they have higher potential for causing significant impacts than do small groups, and adult females have higher reproductive potential than do juveniles (juvenile female tahr have high natural mortality and juvenile male tahr have zero reproductive potential). Catch per unit effort (CPUE) is not an indicator of current or potential tahr abundance or environmental effects. Consequently, CPUE should not be used to prioritise areas for tahr population reductions.

Future Development Recommendations 2025-2026

- > Investigate matrilineal group response to official control disturbance to ensure that methods employed to prevent tahr dispersal are not inadvertently increasing the risk of dispersal.
- > Define the minimum male harvest required by recreational and commercial hunting within National Parks to replace official control of identifiable males within National Parks.
- > Support the development of simple, rapid catchment level tahr impacts and usage assessment procedures, including (where practicable) utilisation of citizen science, to increase the level of information available to support TCOP development.

Principle 3: Coordinate official control with hunting measures - recreational hunting, guided hunting, AATH and WARO.

Effective coordination of hunting measures is key for sustainable tahr management. It requires understanding hunter use of the tahr resource across the tahr range and hunter and landholder contributions within the overall tahr management system. Trophy bulls (males) are the primary motivator for tahr hunting for most recreational and nearly all guided hunters. Fewer bulls can reduce recreational hunter participation, with a commensurate effect on incidental female harvest, sympatric species harvest and hunter contributions to conservation initiatives within the tahr range. For professional guides, fewer bulls cause loss of income, increased costs, and creates conflicts with recreational users. Tahr populations in high enough concentrations in accessible locations are required for the financial viability of WARO.

Biological and regulatory factors are important drivers of official control prioritisation.

Biological:

- Mature Females: The reproductive driver of the population, with the highest reproductivity.
- **Juveniles:** Approximately half of juvenile tahr are males with zero reproductive potential. Lifetime reproductivity of juvenile females is less than for mature females because of high natural mortality of young animals.
- Males: have zero reproductive potential, and tahr are polygynous. Consequently, while removing male tahr affects <u>current</u> tahr abundance, it does not significantly contribute to <u>future</u> tahr abundance. Male tahr have high rates of both natural and hunter mortality.
- Bull tahr commonly inhabit different places to nanny/juvenile tahr, in particular mature bulls live apart from nanny/juvenile groups for much of the year.

Regulatory:

- The Department is required to remove, as far as practical, all tahr from national parks [National Parks Act 1980, section 4 (2)(b)].
- "subject to the provisions of this Act and to the imposition of such conditions and restrictions as may be necessary for the preservation of the native plants and animals or for the welfare in general of the parks, the public shall have freedom of entry and access to the parks, so that they may receive in full measure the inspiration, enjoyment, recreation, and other benefits ..." [National Parks Act 1980, Section 4(2)(e)]

TCOP development recommendations

Management units, except MU4:

Official control should target identifiable females only and avoid targeting identifiable male and juvenile tahr.

• Based on preliminary demographic modelling, if the same percentage of the population is reduced annually but in scenario (1) only females are taken and scenario (2) a mix of females and juveniles is taken, scenario (1) would result in a larger reduction in total population over the long term than scenario (2). However, the overall response is determined by the change in total number of females controlled if this policy were adopted.

Official control in MU4 (National Parks):

Removal of tahr is expedited by first removing tahr with the highest reproductive potential. Consequently, priorities for official control are:

- 1. Focus on places holding nanny and juvenile tahr targeting bull tahr territory will divert control from the reproductive core of the herd.
- 2. Where there is a choice between shooting a mature female or a juvenile the mature female should be prioritised.
- 3. Where there is a choice between shooting a bull tahr or other tahr the other tahr should be prioritised.

Official control of bull tahr displaces natural and hunter-sector mortality of those same tahr, both of which are free to the taxpayer, and can have adverse consequences.

- Male tahr have high natural mortality.
- Male tahr are selectively targeted and removed by hunters, often with significant accompanying kills of other tahr, and with concomitant positive economic effects.
- Male tahr presence attracts and encourages continued hunter activity within National Parks, which is beneficial to the management of sympatric indigenous, valued introduced, and pest species.
- Male tahr presence ensures that hunters, as members of the public, "receive in full measure the inspiration, enjoyment, recreation, and other benefits" [Section 4 (2)(e) having regard to section 4 (2)(b) National Parks Act 1980].

Official Control in all MUs

Official control within all management units should be focused to areas most inaccessible to hunting (recreational and commercial) to avoid replacement of hunting sector effort by official effort.

- For recreational/guided hunting this means official control should avoid road ends, easily traversable landscapes and around huts and tracks.
- For WARO this means official control should avoid road ends and landscapes where carcass recovery is easy/viable.
- For all hunting, this means official control should avoid bulls.

Official control can be undertaken aerially or on the ground. Recent ground control trials have demonstrated the effectiveness and economy of ground control in vegetated areas, indicating potential for much improved environmental outcomes in suitable terrain. The determinants of control type should be as follows:

- Aerial control:
 - o In inaccessible terrain with open vegetation.
 - o Between August and November to reduce conflict with hunting and for animal ethics reasons, e.g., before tahr kids are born.
- Ground-based control:
 - o In traversable terrain with, or adjoining, thick vegetation.
 - o During ethically appropriate times, e.g., Spring pre-parturition or March when kids are self-sustaining.
 - Targeting mature females only, avoiding males and juveniles, except within MU4 where females and juveniles are to be targeted (see above).
 - o Be prioritised as follows: (1) hunter-led management operations, which encourage hunter participation and reduce government operational costs. (2) control by approved professional operators, with clearly defined expectations that align with the principles outlined above, and with adequate reporting.

WARO and AATH contributions

There is currently an extremely limited market for WARO tahr meat, which is only viable when tahr can be sold as a high value product. Large-scale WARO tahr harvests are unlikely in the foreseeable future.

As of December 2024, AATH offsets were of the same magnitude as official control, so they are a large component of the tahr control package.

There is a growing risk that AATH contributions will decline because of reduced tahr numbers on public conservation land (PCL) and changed market conditions. Currently, a combination of reduced mature bull availability on PCL (and therefore higher costs per trophy harvested), increased time required per offset kill, and increased helicopter operating costs is affecting AATH operators. A decline in the quality (horn size of bulls) being harvested from PCL by AATH operators has also been reported by the sector. Hunting on private land has become relatively more attractive to AATH operators for financial and reliability reasons, and this effect is likely to become more pronounced. This may reduce the future number of tahr offsets from the AATH sector, with a consequent reduction in overall tahr control. Consideration should be given to the potential implications and appropriate responses.

Hunting sector suggestions to appropriate responses include some or all of:

- change the offset ratio (e.g. 2 offsets required rather than 5),
- remove the requirement to offset chamois harvests,
- replace the offset requirement with a financial or flying time contribution,
- count WARO harvest as AATH offsets.

Where possible, AATH and WARO should be coordinated and/or combined to reduce conflicts and achieve synergies. Reductions in juvenile and nanny tahr abundance will limit future bull tahr availability for AATH and increase WARO and AATH offset costs. To provide for continued hunter demand and to reduce conflict it is important to consider actions that would address effects arising from misalignment.

Recent TCOPs have sought to reduce conflict between official control/AATH offsets and back country recreational users by official control not targeting bulls inside the feral range, except for MU4, and by not undertaking control or permitting AATH:

- during the tahr ballot within the ballot areas,
- in areas where recreational users were sighted while undertaking these activities,
- over public holiday weekends (official control only).

Conflicts would be further reduced by encouraging AATH offsets to be applied so that they support other hunting measures.

AATH harvest of both tahr and chamois invokes female tahr harvest offsets. However, offsets are not aligned with official control measurement outputs, e.g., official control is based on hourly effort (input) and AATH offsets are based on the number of tahr controlled (output). There should be the facility for AATH offset outputs to be aligned with official control activities.

To maintain fairness and effectiveness, the current 5-tahr offset could be replaced by (a) an hourly helicopter-time contribution or (b) a set financial contribution to subsidise WARO or NZTF targeted harvest operations or official control (depending on the best approach for the landscape that effort is to be allocated) or (c) a combination of both.

(a) Hourly contributions could:

- o allow targeting of areas with highest conservation outcomes which do not always align with areas of highest tahr abundance,
- o provide consistency and predictability in the expenses incurred by AATH harvest,
- o be easily established by, for example, reasonably estimating the helicopter time required to kill female tahr,
- o be directed to complement other management, e.g., official control and recreational and guided hunting.

(b) Subsidising other approaches could:

- o Reduce conflicts between AATH and recreational hunters.
- o Enhance the social licence of tahr reduction efforts by supporting increased non-government contributions and resource use.
- o Enable the population reduction method to be selected based on geographical and biological considerations, thus improving effectiveness.

(c) A combination of both could:

o Provide flexibility in decision making and support adaptive management.

WARO permits should be issued one year in advance for viable areas that hold high concentrations of female tahr after the tahr rut to:

- Provide market certainty for WARO operators and processors.
- Enable easy recovery e.g., while snow is on the ground.
- Complement other management, e.g., official control and recreational and guided hunting.
- Reduce conflict with recreational/guided hunting activities.

Future Development Recommendations 2024-2025

- > Compare the number and age demographics of tahr removed per hour of control and remaining when targeting females only versus females and juveniles and simulate population management outcomes in each scenario.
- Assess the suitability of different management approaches across tahr habitat to support the coordination of hunting measures and to ensure that official control is being applied to those areas where hunting measures would not be applied or are likely to be less effective.
- > Specify in the TCOP that AATH offsets may be applied using other hunting measures (e.g. WARO and organised ground-based recreational targeting of female tahr, a changed offset ratio (i.e. < 5:1), a financial contribution) and develop a formula for aligning offset outputs with official control outputs.

Principle 4: Translate "encouragement of recreational/guided hunting" into identifiable activities undertaken by DOC.

The contribution of recreational hunting to tahr population management is not known but is likely to be significant – the Game animal Council is currently collecting data that will help to understand that. There is incomplete information on commercial hunting. Providing information to hunters is important for enabling hunters to make decisions that support tahr management. However, there is currently no mechanism to measure the success of TCOP-prescribed communications for increasing recreational hunter contributions.

There are many approaches that can be used to encourage hunting. Facilitating increased access in otherwise access limited areas is currently used within the tahr management system, e.g., ballots. This form of encouragement is best suited to difficult to access areas, e.g., requiring helicopter access, in primarily female habitats during the rut. An opportunity exists to encourage increased hunter contributions to tahr removal within National Parks by facilitating increased access to remote areas. Helicopter operators inform us that there is a huge demand for this service, which they are unable to supply. Increased hunter access would also (i) enable the replacement of official control of bulls within National Parks with hunter bull harvest contributions, (ii) establish an area where recreational hunters hunt alongside AATH activities with a cooperative incentive (e.g., both are contributing towards preventing official control of valued males), (iii) reduce conflicts between hunters and the DOC, and (iv) increase the opportunity for compulsory hunter harvest and observation reporting.

Note: HTCP 1993, page 39, 5.1 "The department <u>will</u>... require participation in the compilation of statistics by keeping of detailed hunter diaries"

While recognising the importance of increased hunter tahr kills, previous TCOPs have not identified methods for DOC encouragement of recreational/guided hunting. While the Department has provided online maps of bull tahr observations from aerial operations, there is some delay in producing the maps (which is important because bull tahr move seasonally), and other factors affect recreational participation, particularly access.

Future Development Recommendations 2025-2026

- > Improve communication of access opportunities across the tahr range and explore opportunities for measuring resulting changes in recreational hunter harvests.
- > Operate a temporary ballot, or open landing sites over a defined period, in the National Parks (until densities reach levels where hunter harvests are insufficient to warrant helicopter access to sites).
- Facilitate recreational and commercial National Park-specific tahr harvest reporting, with harvest returns applied to achieve the minimum male harvest quota for National Parks to replace official control of identifiable males.

Principle 5: Support MU1 Hunter-led management.

A highly cooperative relationship between DOC, Te Rūnanga o Ngai Tahu, Te Rūnanga o Arowhenua, the New Zealand Tahr Foundation and the GAC has resulted in approved goals, objectives and draft activities, with responsibilities for implementation of each activity identified. In January 2025 a draft community agreement between DOC and the NZTF is close to finalisation. In anticipation, NZTF is planning hunter-led tahr control operations in 2025, and work is progressing towards implementing other actions. During development of the community agreement the hunting sector has provided information on tahr abundance to support design of official aerial control and AATH offset operations in MU1 – this will continue.

Future Development Recommendations 2025-2026

Continue liaison between DOC, Te Rūnanga o Ngai Tahu, Te Rūnanga o Arowhenua, the New Zealand Tahr Foundation, and the GAC to identify priority areas for tahr control and to facilitate and co-ordinate management activities amongst participating entities.

Principle 6: Enable flexibility within the TCOP.

As set out in Principle 2, official control should be focused where it will have the greatest conservation benefit. It is also desirable to coordinate control methods and use the most effective and cost-efficient methods. The TCOP should be adaptive so it can respond to new information and learnings throughout the operational year. There should therefore be the facility for DOC, in consultation with the GAC, to adjust the amount and allocation of resources available during the operation of the TCOP. The mid-point reviews have been extremely productive, resulting in improved allocation of the limited control resource, reduced conflict between ground hunters and aerial control operations, and enhanced engagement from the hunting community. The GAC strongly supports continuation of the mid-point review and supports more regular reviews as appropriate.

2025-2026 TCOP Recommendation

> Continue with the mid-point review and adapt control to new information during the control period.

Priorities for allocation of official tahr control on public conservation land in 2025-2026.

General priorities

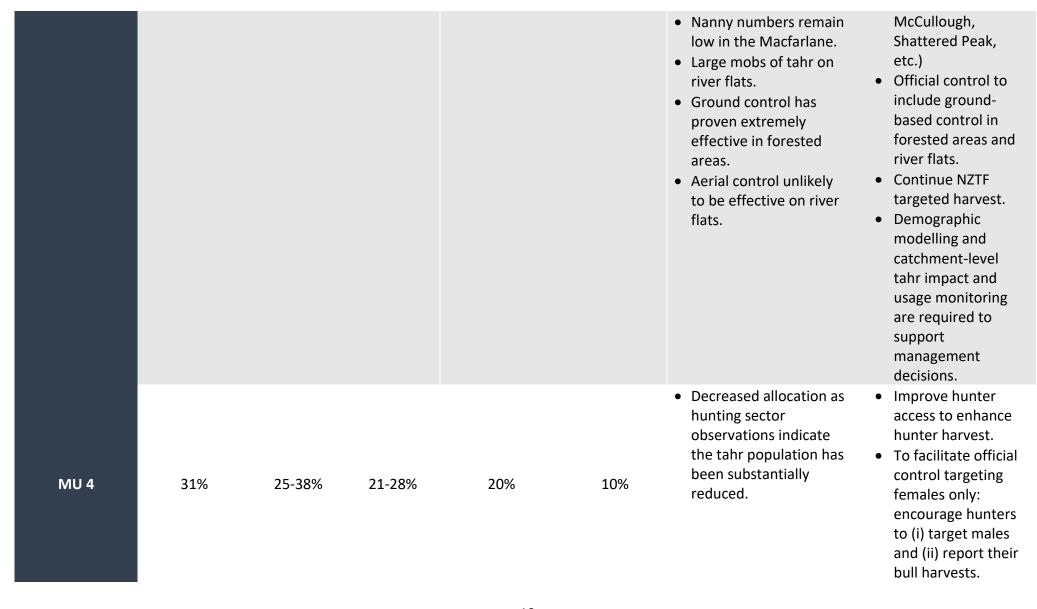
- 1. All tahr outside the Feral Range.
- 2. All tahr in exclusion zones.
- 3. Female and juvenile tahr adjacent to feral range boundaries outside the management units.
- 4. Female and Juvenile tahr within MU4.
- 5. Mature female tahr within management units in areas where non-government hunting measures are limited (due to accessibility, terrain or landcover), and where there are larger female group sizes and significant adverse environmental impacts caused by tahr.

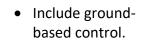
Allocations of Control Effort

- > Proposed **official control**: Detection, monitoring, aerial control, ground control. Ground-based detection is required in some areas where tahr have become highly sensitised to aircraft.
- > **AATH offsets**: These are indicative allocations that will benefit from adaptation to make offsets cost-effective for helicopter operators, and depending on the total volume, which is unknown *a priori*.

Table 1 Previous years and proposed allocations of hours official control and AATH offsets, reasoning and supporting notes.

Management unit	Allocation 2022-2023 TCOP % Hours	Allocation 2023-2024 TCOP % Hours	Allocation 2024-2025 TCOP % Hours	Proposed 2025- 2026 Official Control Allocation % Hours	Proposed 2025-2026 Allocation of AATH offsets % of offsets	Reasoning Notes
OSFR*	34%	46-54%	38-48%	40%	0%	 Maintain high effort outside feral range to prevent range expansion.
INSFROMU**	7%	4-8%	5-9%	15%	10%	 Area of least focus to date and bordering OSF risks range expansion. Areas bordering MU6 require focus. Large mobs of tahr on Landsborough River flats unsuited to aerial control. Females and juveniles only. Increased focus on preventing spread OSFR. Investigate whether range expansion risits is decreased through control effort.
MU 7	0%	0-2%	0-2%	0%	0%	 Sector indications are that tahr populations in this management unit remain very low.
MU 6	10%	4-8%	14-16%	20%	5%	 High concentrations of mature females remain in the southern end of this MU and pose a significant risk of range expansion. Official control focution known concentrations and areas of expansion (Solution Range, Paringa,





•	Incentivise AATH
	focus.

MU 2	5%	2-6%	7-9%	0%	15%	 Offsets targeting high concentrations of mature females will prevent losing ground gained previously.
MU 5	2%	0%	0%	0%	25%	 Pockets of higher concentrations of mature females. Access difficult for ground hunters. Concentrate AATH offsets for operator efficiency.
MU 1	3-7%	0-2%	2-3%	5%	10%	 A small allocation of official control is required to support hunter-led management. AATH offsets are complementary in areas Allocate as required to support hunter-led management.

MU3	3%	0%	2%	0%	25%	unsuited to ground access. High hunter use area, but limited aerial access reduces hunter effectiveness in large areas. Concentrate AATH offsets for operator efficiency. AATH offsets are required to support hunter contributions in inaccessible areas.	
Totals	100%	100%	100%	100%	100%		 In all areas facilitate official recognition of hunter harvest.
ZIP/OSPRI/ WARO	Tahr carcass	ses used to supp	port these oper		obtained from a contribution to	reas of high concentrations of fo	emales. Females only.

^{*} OSFR – Outside of feral range and exclusion zones.

^{**}INFROMU – Inside feral range but outside management units.