



## Meeting of the Environment and Integrated Catchments Committee

**Date:** Wednesday 12 May 2021  
**Time:** 9.00am  
**Venue:** Council Chamber  
Hawke's Bay Regional Council  
159 Dalton Street  
NAPIER

### Attachments Excluded From Agenda

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6.	<b>Review and Recommendations of the Hawke's Bay Possum Control Area Programme</b>	
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# Hawke's Bay Possum Control – A Review of Effectiveness and Alternatives

Collins Consulting  
APRIL 2021

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### Executive Summary

An efficiency and effectiveness review of Hawke’s Bay Regional Council’s (HBRC) biosecurity programmes in August 2020, found a strong desire among staff, contractors and community respondents for improvements to the regional possum control programme. This report builds on that analysis by looking more closely at the effectiveness of the current possum programme and reviewing alternatives to the current possum control area (PCA) model.

As discussed in the August 2020 report, councils decide for themselves what is appropriate pest management in the context of their region, their economy and their community’s expectations. However, from an operational standpoint, the current HBRC approach to possum control has inherent issues that complicate implementation and reduce the certainty that council’s objectives are being achieved. These issues are summarised below and detailed in the “Conclusions” section of this report.

#### The landowner responsibility model

The landowner responsibility model is intrinsically harder to manage and monitor than having work done by contractors. This is partly because there are numerically more landowners potentially doing control on their own properties than the number of contractors it would take to control a similar sized area.

A related issue is that for most landowners, possum control will be just one of the many jobs to be done on the property; even with the best of intentions, some owners will do possum control haphazardly or not at all. This issue also arises for other councils that use the landowner responsibility model, e.g., Taranaki Regional Council. HBRC staff calculated that around 50% of those ostensibly doing their own control are actually doing little or nothing. Contractors, in contrast, will be more singularly focused and must meet the council’s performance targets in order to get paid.

#### Insufficient monitoring

HBRC’s ability to monitor actual possum numbers in its control areas has diminished as the total programme area has become larger. Staff report that currently, only about 10% of the area is monitored every year and that the scale of the monitoring programme varies annually depending on available budget. This low level of monitoring creates uncertainty and makes it more difficult to know what is actually happening to possum populations across the PCA programme.

HBRC rules require landowners to maintain possums at or below 4% RTC when all the monitoring lines on the property are averaged. This means, it is easier for large properties, which will have more lines, to pass a monitor even if they have high possum numbers in one area.

It also is impractical to monitor properties 4ha and smaller because there is not enough area on those small properties to place possum monitoring lines. This is another source of uncertainty because those small properties have the capacity to harbour large possum populations.

An additional concern is that HBRC does not have a robust biodiversity monitoring programme to help assess the effect of its possum control. Understanding biodiversity trends in managed and unmanaged areas would help the council evaluate the effectiveness of its programmes.

#### PCA exemptions

Under HBRC's current policy, both production forestry and smaller rural properties are to some degree exempt from possum control rules. These exemptions complicate the implementation of the possum control programme and should be reviewed.

#### Use of toxins

Linked to the landowner responsibility model is the widespread use of brodifacoum, which can be used without any special training or certification. In contrast, licensed contractors are able to use a wider range of toxins than farmers and other members of the public. A Government-led reassessment of the regulatory status of brodifacoum is under way<sup>1</sup> and its use may well be restricted. In the future, it is likely to be more complicated for landowners to use brodifacoum, further complicating the landowner responsibility model of possum control.

#### Funding for possum control

The 2020 report found that the average total possum control budget from regional councils is \$2 million; HBRC's programme is roughly half that amount. The budget for HBRC's possum programme also is less than all but one of its immediate North Island neighbours.

This benchmarking strongly suggests that HBRC is spending too little on possum control, compared to councils that have similar objectives and operational needs.

HBRC currently subsidises private landowners by either paying 40% of toxic bait costs for those who control possums on their own or anything over \$2/ha for landowners who use contractors. It appears that those subsidies simply help some ratepayers meet their regulatory responsibilities by transferring costs to other ratepayers. The effectiveness of those subsidies should be considered carefully in terms of transparency and whether they are an effective way to achieve council's objectives.

Lastly, a funding review that quantifies the relative importance of the outcomes from possum control would provide an opportunity to review the programme's funding model. For example, if biodiversity enhancement and protection is becoming a more important outcome of possum control, then there would be an argument for spreading those costs more widely across the regional community.

#### Comparative costs

This report does not include a detailed analysis of the costs of different models of possum control. However, some consideration of costs is necessary to inform the discussion.

Any attempt to estimate the full cost of possum control should try to take into account costs across the system, as well as direct and indirect costs. For example, landowners who do their own control

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<sup>1</sup> <https://www.mpi.govt.nz/dmsdocument/33439/direct>

have direct costs such as bait, but the time they spend filling bait stations is a less obvious opportunity cost. Their regional rates also include some indirect possum control costs.

A rough estimate of the cost of the current PCA programme is in the \$4 - \$8 per hectare range.

In contrast, the average, estimated cost for landscape maintenance control from experienced Hawke's Bay possum contractors was \$7-8/ha.

There also "costs" that are very difficult to quantify, but important nonetheless. The current model generates uncertainties that would be absent or greatly reduced if professional contractors were used. This does not mean the PCA model is fatally flawed, but it does mean that it is more difficult to know if money is being well spent and outcomes achieved.

#### Community satisfaction

Testing the level of community satisfaction with the current PCA programme was not part of the brief for this report. In the 2020 report, which was dominated by farmers, the results from the admittedly small sample showed a clear unease about the direction of the programme. HBRC staff also indicated that the PCA programme is starting to slip and that its effectiveness will decline if changes are not made. Taken together, this suggests that there is at least a portion of the community for whom the programme is not meeting expectations. This warrants a more in-depth conversation with stakeholders.

#### Recommendations

##### Primary Recommendation

The primary recommendation of this report is that for greater operational efficiency and certainty of achieving outcomes Hawke's Bay Regional Council should move to a contractor-based model for possum control.

No operational model will be perfect, but the landowner responsibility model has inherent challenges that make it harder to manage and be certain of high-quality outcomes.

Nevertheless, operational efficiency is only one consideration. Value for money is another consideration, as is community buy in. The landowner responsibility model could be the "right" system for Hawke's Bay; as long as the community and the council are fully aware of the trade-offs. An essential step would be consultation with the community, including a discussion of the costs of the PCA programme, the various benefits it provides and the different options for funding the work.

##### Secondary recommendation

To facilitate that community discussion, a funding options analysis should be done to examine the basis for the current rating system for the PCA programme. For example, is the current area-based targeted rate model still appropriate or would capital value rating better capture the benefits provided by possum control? Similarly, should 4ha properties be included in the targeted rate? Have the beneficiaries and exacerbators been appropriately assessed, particularly given the council's greater emphasis on biodiversity enhancement and the risk posed by forestry properties?

These considerations will affect how the financial impact of any new approach to possum control would be spread across the community.

##### Recommendations if HBRC retains the landowner responsibility model

If HBRC retains the landowner model of possum control, there are steps that should be taken to

improve efficiency and effectiveness:

- Bring forestry fully into the PCA programme and remove the current rating discount that forestry receives
- Develop methods for efficient monitoring of small properties (less than 4 ha)
- Amend the monitoring rules to require no single line higher than a given figure
- Remove the financial subsidies for the purchase of bait and the use of contractors
- Increase the PCA budget to increase engagement with landowners and
- Increase the monitoring budget so every property in a PCA is monitored at least every four years.

#### Cross-cutting programmatic recommendations

Regardless of whether HBRC adopts a contractor-based model or retains the current approach, the recommendations below would help the programme operate more effectively and reduce risk:

- Bring forestry fully into the possum control programme and remove the current rating discount that forestry receives
- Develop and implement an appropriate stratified random possum monitoring design to determine the level of monitoring required to give sufficiently high confidence that the results for any given year accurately reflect conditions across the relevant areas
- Develop and implement a biodiversity monitoring programme for managed and unmanaged areas in Hawke's Bay to help the council evaluate the effectiveness of its programmes
- Develop operational alternatives for a future in which brodifacoum is no longer easily available as the primary possum control tool.

#### Background

Possum control is a landowner responsibility under the Hawke's Bay Regional Council's regional pest management plan (RPMP).

Since 2000, this policy has been primarily implemented through possum control areas (PCA) organised by the council. In these areas, the council either pays for and implements an initial knockdown of possum numbers or the areas have been managed by OSPRI and transition into the PCA programme. After that initial control, landowners must either do control themselves or hire contractors to keep possum numbers below 4% RTC.<sup>2</sup>

The council also subsidises landowners through PCA schemes. The council will pay 40% of possum bait purchased by landowners and also will pay for possum contractor costs that exceed \$2 per ha, which makes that the upper limit of direct cost to landowners. In the past five years, the council paid \$284,000 to contractors for this work.

In 2020, HBRC had:

- 88 current PCAs totalling 672,000 ha
- 18 urban and semi-rural PCAs totalling 24,000 ha
- 13 PCAs under OSPRI management because of the current TB outbreak totalling 91,000 ha.

<sup>2</sup> Residual trap catch index (RTC) was developed to provide a standardised method for estimating relative densities of possums. It is the percentage of trap-nights in which a possum was captured.

The 88 rural PCAs made up of 4,300 rateable properties<sup>3</sup> are the focus of this report.

The council's budget for the possum control programme in FY 2020/21 is \$1.2 million.

### Desired outcomes from possum control

As with all biosecurity operations, possum control is a means to an end, not an end in itself. The outcomes sought from possum control in Hawke's Bay are:

- Protecting and restoring native biodiversity
- Reducing the risk of bovine TB outbreaks
- Reducing other impacts on commercial primary production (pasture consumption by possums, damage to horticulture, damage to young forestry plantings, etc.)
- Protecting erosion control plantings
- Protecting public amenity values such as home orchards and gardens

All of these issues are valid reasons to control possums, however they are not all equally significant to the Hawke's Bay community. Designing an "effective" possum control programme for HBRC requires an evaluation of the relative importance of these issues to the council and to the community. That public discussion is essential to developing an effective programme but is outside the scope of this report.<sup>4</sup>

It is worth emphasising the importance of that discussion to the council's decision-making. A possum control programme that was intended to maximise the protection of native biodiversity would look different from a programme focused on reducing the risk of bovine TB infecting herds in the region. Other councils have had this debate and structured their programmes accordingly. For example, Environment Bay of Plenty Regional Council's possum control is entirely biodiversity driven and operates in areas of significant native habitat. Horizons Regional Council is primarily focused on primary production threats and manages possums over large areas of farmland.

The intended outcome of possum, and therefore who benefits, also will largely shape how the work is funded. For example, Waikato Regional Council's primary reason for doing possum control is to protect and enhance native biodiversity, with additional economic and amenity drivers. The outcomes of possum control are seen as 100% public benefits<sup>5</sup> and it chose to fund the work through a biosecurity rate set on a capital value basis on all rateable properties in the Waikato region. The council's logic is excerpted below:

*The council believes this is an appropriate system because it reflects the region-wide community benefits that pest control produces. Ultimately, what is most important in terms of equitable funding is why we manage pests, not where we manage them.*

*Most of the benefits from the pest control work we do are not linked to where you live. Controlling pests to protect biodiversity benefits everyone who values the survival of native birds and other species. Similarly, controlling agricultural pests benefits our entire regional economy.*

<sup>3</sup> As properties get subdivided and sold, the number of properties in a PCA will increase over time even if the total land area remains the same.

<sup>4</sup> The council will be surveying farmers in early 2021 to better understand their views on the PCA programme.

<sup>5</sup> <https://www.waikatoregion.govt.nz/assets/WRC/Council/Policy-and-Plans/LTP/2018-2028/Section-6-2018-2028-LTP-WEB.pdf>, page 128

*For example, we have found alligator weed - a very serious pest plant - in urban gardens, in maize fields and in several lakes. Any outbreak of alligator weed is a major potential problem for the whole region.<sup>6</sup>*

## Current PCA performance

### Monitoring

Hawke's Bay Regional Council staff focus monitoring effort on PCA properties where the occupier has chosen to do possum control themselves, as opposed to using a contractor.

Over the last five years, an average of 9% of the total PCA area has been monitored for possum numbers annually. However, according to staff that annual figure varies depending on the budget available. For example, in 2015/16 it was 14%, while 2017/18 was just 5%.

The degree to which possum numbers are controlled by landowners to levels required by the RPMP<sup>7</sup> also varies by year. Over the five years from 2015/16 to 2019/20, an average of 15% of monitored properties were not compliant with the RPMP requirement.<sup>8</sup>

Residual Trap Catch figures for monitored properties also varied but were generally below 3%, with an average of 2.1% over the five years.

The RTC results are at first glance reassuring in terms of achievement of the RPMP objectives. However, they are extrapolated results from a sample of a sample, i.e., primarily properties where occupiers do their own control and only 10% of the total PCA area. In addition, monitoring does not intentionally target areas with good habitat that are likely to be possum "hotspots."<sup>9</sup>

The monitoring issue is discussed more in the "Conclusions" section. However, it is worth noting here that the current monitoring programme is designed to assess individual landowner compliance, rather than to establish RTC levels across an entire PCA.

A key question is what level of monitoring would be required to have a sufficiently high confidence that the compliance monitoring results for any given year accurately reflect conditions across the PCA programme. Suffice to say here that it is currently impossible to have a high degree of confidence in region-wide conclusions about the effectiveness of possum control.

### Landowner compliance

As noted previously, land owners in PCAs are required to either control possums themselves or engage a contractor to do the work. However, HBRC staff have estimated that a large percentage of landowners do neither or control attempts are sporadic and insufficient. These essentially "free ride" on their neighbours, only controlling possums if they are detected by HBRC monitoring.

HBRC staff estimate that approximately 30% of PCA properties use contractors.<sup>10</sup> The remaining 70%, therefore, would ostensibly do their own control. However, staff calculated that around 50% of those occupiers are likely doing little or no control.

This figure comes from a 2016 internal analysis in which HBRC staff looked at the total volume of toxin recorded as part of the subsidy scheme. They then took a conservative approach to calculate

<sup>6</sup> <https://www.waikatoregion.govt.nz/council/rates/ratesfaq/>

<sup>7</sup> Previously 5% RTC, now 4%

<sup>8</sup> HBRC staff data

<sup>9</sup> Although the monitoring protocol does direct contractors to the habitat nearest to a random point

<sup>10</sup> 2006 HBRC survey

how much bait would theoretically be applied by landowners doing control themselves. For the 2015/16 financial year, approximately 247,615 ha was nominally under control by occupiers, however only about 31,000 ha would have been covered with the bait sourced through the subsidy scheme. This would suggest that 216,000 ha went uncontrolled, or about 54% of the total PCA sample area.

In the 2014/15 financial year, data was available only for six months and had to be extrapolated. Those figures suggested that 9.8% of the sample PCA area was receiving appropriate control by occupiers.

This analysis is coarse and subject to caveats. A few occupiers may have purchased bait online without using the HBRC subsidy. On the other hand, some may have purchased bait but never actually put it out for possums. Nevertheless, these figures are supported by reports from HBRC staff and contractors, all of whom report significant anecdotal evidence of landowners not undertaking regular possum control.

#### Comments from HBRC contractors

Contractors involved with the HBRC possum programme were interviewed separately for this report. Contractors discussed the pros and cons associated with the current approach to control and suggested changes that could improve performance.

Contractors were unanimous that the current monitoring regime is inadequate to detect possum numbers with sufficient accuracy. With one exception, all contractors felt that moving to larger control areas and longer contracts would improve control outcomes.

Most contractors said they were aware of numerous landowners who did not do the work necessary to control possums on their property. As a result, many reported finding "hotspots" of high possum numbers in PCAs with reportedly low RTCs overall.

A common theme was that some landowners are genuinely effective, but performance is quite variable.

Several contractors questioned the logic of exempting forestry from the possum control rules and said forestry blocks often were refugia for possums.

Most contractors did not believe that \$2/ha was a realistic reflection of the cost of controlling possums. None were sure how that figure had been set and they felt it was arbitrary.

Sample comments from contractors are excerpted below.

#### Landowner control

- *"For some owners it is just one job too many or too expensive for something they think is not important."*
- *"Maybe 25% of farmers do nothing. That's OK for a while; they can free ride. But if they have any habitat, numbers soon increase and spread. Past a certain tipping point a bait station network is not enough to get them down."*
- *"10 years ago, the southern part of the region was almost possum free; but people are getting complacent and there is not enough monitoring."*
- *"A small percentage of farmers do a good job regularly. Others may fill when not needed, or at the wrong time, etc. Some very sporadic and unreliable; some don't do anything until told to. They see it as a one-off business cost."*

- *"HBRC's model is the best. If you switch to large areas for contractors, they will bid low to get the job then not be able to do the work. If a property fails, require them to use a contractor."*
- *"Sure, you can track bait bought at Farmlands, but some just sits in the shed. Not intentional, [people] just too busy. Lots of small blocks that say they will do it but never do; just don't get around to it."*

#### Monitoring

- *"Need to monitor more and use better screening and targeting of properties. Double the budget."*
- *"Reduce costs by improving risk-based targeting and use penalties for failures."*
- *"Monitoring not good enough; one property had no control for 20 years, council let it slip through the cracks."*
- *"Not monitoring enough or in the best places; hard for contractors to blow the whistle on poor performing landowners."*
- *"HBRC monitoring not frequent enough; budget too small. Some results come back "low" but have missed the hot spots."*

#### Forestry exemption

- *"Crazy to have a forestry exemption; get them into the system."*
- *"Finding high numbers of possums in forestry blocks."*

#### Costs

- *"\$2/ha is impossible in possum habitat."*
- *"If you are doing possum control on a farm with no habitat in the middle of a big area where RTC is really low, then maybe \$2/ha. But are you really "doing" anything?"*
- *"Feels like cutting your throat ...but it does fill the holes when other work is slow. Maybe it could work for large areas with very little habitat and where possum numbers were already low... one bait station per 6 ha."*
- *"I can do most of my properties for below \$2/ha. Charge rate is \$65/hour plus bait."*
- *"To do [farming] country would be \$20/ha; tough country \$50/ha."*

#### Community satisfaction

No community satisfaction surveys were done for this report. However, the "Biosecurity Efficiency and Effectiveness" survey from August 2020 included questions related to possum control.

In that survey, most community respondents thought the possum programme was not very efficient, with an average score of 49 out of 100<sup>11</sup>. Comments favouring an approach that made greater use of possum control contractors were not universal, but did appear in a variety of forms. One comment said, *"[Investigate] a possum control rate which is then used to manage the possum control operations across HB with a regional view. ... With plenty of monitoring."* Another comment supported an *"HB wide full-time possum cull by professional trappers."*

Monitoring was another area that community respondents believed improvements were needed. Eight of nine respondents said surveillance for "sustained control" pest animals is inadequate. Again, there was an emphasis on possums: *"All PCA's should be monitored yearly"* and *"[Possums] seem to have got away in this neck of the woods."*

<sup>11</sup> From 1 "not at all efficient" to 100 "very efficient"

Overall, there was a strong theme of wanting improvements to the possum control programme. Comments included:

*"[ex TB] areas are being handed back to landowners with very little and normally no knowledge of the situation and importance of possum control. It is naturally going to deteriorate over time. ... Not necessarily by intent but by complacency and the swiftness in which possum numbers bounce back."*

*"It seems there are gaps in the possum control programme which may be being seen as rising numbers in possums in some pockets from the low numbers which have been seen in the last decade or so."*

### Alternative possum control models

Hawkes Bay Regional Council has made possum control a landowner responsibility. However, other councils have taken different approaches.

#### Waikato Regional Council

Control method -- Possums are controlled by contractors responsible for large areas of the region.

RPMP objective -- Reduce the adverse impacts of possums at high value biodiversity sites.

RTC target level of service -- Less than 5% RTC

Monitoring frequency -- Every operation is trend monitored two years from when control last occurred.

Area under control -- 543,000 ha<sup>12</sup>

Council Cost -- \$3.8 million<sup>13</sup>

Funded by -- A targeted biosecurity rate set on a differential basis using equalised capital value on all properties in the region.

#### Analysis

WRC's primary reason for doing possum control is to protect and enhance native biodiversity. Approximately 30% of their possum control area is classified as "woody vegetation and considered good possum habitat."<sup>14</sup> However, the council also sees region-wide economic and amenity value from possum control. Staff said they often work in partnership with the Department of Conservation and get good mutual benefits. Bovine TB is a concern of course, but WRC believes it is OSPRI's role to respond if there is an outbreak in areas that have been declared TB free.

WRC initially had some self-help possum control schemes but found performance to be very mixed and all possum control under the RPMP is now done by contractors. Of course, some community groups and landowners do their own possum control, either in areas not serviced by the council or in addition to council-funded work.

Several years ago, WRC began receiving fewer bids for tenders and feedback from contractors that larger, longer-term contracts were needed.

<sup>12</sup> Pers. comm. WRC staff

<sup>13</sup> Response to HBRC survey

<sup>14</sup> WRC staff data

The region is now divided into three parts – north, central and south – with the intention to identify a preferred supplier for each area. Contracts are for three years, with a three year right of renewal if performance targets are met.

Council staff say this system has worked very well. It delivers reliable outcomes because every contract is performance based. Failures are very rare but if an operation fails to meet RTC requirements the contractor must re-do the work.

Every operation is trend monitored two years from when control last occurred. Staff said the council usually gets three years between control because areas are large, which reduces invasion, and possum numbers are kept uniformly low.

Staff believe that the combination of low re-invasion and low RTC creates considerable savings.

WRC does periodic landowner surveys and has found widespread support for its approach.

Staff said the council is aware of the risk that the preferred supplier model poses for competition. However, the council has a good understanding of what possum control in a given area should cost and would be aware of any attempts to inflate prices. Staff also noted that they had been getting fewer and fewer bids for tenders (and in some cases no bids) because contractors saw the work as uneconomic. In that sense, competition was already limited.

Contractors' costs are typically \$18/20 per ha, with areas worked every two to three years. The outcomes of possum control are seen as 100% public benefits<sup>15</sup> funded through region-wide rating:

*This rate is set on capital value, on a differential basis using projected values and the location of the land within the Waikato region. The council believes this is an appropriate system because it reflects the region-wide community benefits that pest control produces. Ultimately, what is most important in terms of equitable funding is why we manage pests, not where we manage them.*

*Most of the benefits from the pest control work we do are not linked to where you live. Controlling pests to protect biodiversity benefits everyone who values the survival of native birds and other species. Similarly, controlling agricultural pests benefits our entire regional economy. ...<sup>16</sup>*

WRC does not automatically continue possum control in areas where TBfree New Zealand has concluded that bovine tuberculosis is no longer a threat. Instead, the council includes former TB areas in the same scoring prioritisation process as other areas in the region. These criteria include agricultural values, ecological components and catchment health considerations.<sup>17</sup>

#### Bay of Plenty Regional Council

Control method -- Possums are not a pest in the Regional Pest Management Plan. They are controlled by contractors in areas of high biodiversity values.

RPMP objective – n/a

<sup>15</sup> <https://www.waikatoregion.govt.nz/assets/WRC/Council/Policy-and-Plans/LTP/2018-2028/Section-6-2018-2028-LTP-WEB.pdf>, page 128

<sup>16</sup> <https://www.waikatoregion.govt.nz/council/rates/ratesfaq/>

<sup>17</sup> [https://www.waikatoregion.govt.nz/assets/PageFiles/21542/3583%20-%20RPMP\\_2014-24%20-%20Section%201.pdf](https://www.waikatoregion.govt.nz/assets/PageFiles/21542/3583%20-%20RPMP_2014-24%20-%20Section%201.pdf)

RTC target level of service – n/a

Monitoring frequency – Site based

Funded by – Primarily general rate; some fees and charges

#### Analysis

Ecologically, the Bay of Plenty region is quite different from Hawke’s Bay, with large areas of native forest (including public conservation land) interspersed with relatively small blocks of farm land. Seventy-five percent of “priority biodiversity sites” are multiple owned Maori land.

Operationally, BOPRC also has taken a very different approach to possum control compared to HBRC. BOP has identified 430 “priority biodiversity sites” where they may support landowners or community groups, including paying for possum control as part of that support. This financial year, 181 of the 430 sites are receiving some level of active management (with or without involvement of BOPRC). Assessment of managed sites shows that 53 of these sites receive a low level of management, 88 receive a moderate level of management, 35 receive a good level of management, while five receive an excellent level of management (these include pest free islands). In 2019/2020 BOPRC allocated approximately \$2 million to biodiversity projects.<sup>18</sup>

Environment Bay of Plenty’s costs for pest control are higher than figures typically cited in this report because they cover both rat and possum control in significant biodiversity sites, which usually are more challenging than farming landscapes. The council’s contribution for rat and possum control across 3,049 ha of biodiversity sites is approximately \$155,000 annually, or \$51 per ha, excluding monitoring costs, track cutting etc.

#### Horizons Regional Council

Control method – A combination of contractors and council staff.

RPMP objective – To reduce adverse effects on economic wellbeing and the environment.

RTC target level of service – 10% RTC<sup>19</sup>

Monitoring frequency – 25% of possum control areas monitored annually

Area under control – approximately 1 million ha, of which approximately 100,000 ha is possum habitat that receives control<sup>20</sup>

Council Cost -- \$3.9 million

Funded by – 70% general rate on urban properties/30% targeted rate rural properties greater than 4 ha

#### Analysis

Horizons staff believe that using a mix of staff (60% - 65% of control) and contractors (35% - 40%) allows managers more flexibility and creates a bit of competition between the two teams. Staff generally work the easier country that is relatively close to council depots.

<sup>18</sup> <https://atlas.boprc.govt.nz/api/v1/edms/document/A3480207/content>, page 102

<sup>19</sup> Will propose 5% in next RPMP

<sup>20</sup> Rod Smillie, pers comm.

The Horizons programme was originally driven by TB and that is still the primary factor. Horizons staff said, “We have a responsibility to keep possum numbers low in ex TB areas.” However, issues like biodiversity and “amenity” are becoming more important. He also said that landowners want the same low possum numbers they would get with TB control. There is an expectation, assuming budget is available, that ex-TB areas will automatically come into a Horizons possum control programme.

Horizons monitors 25% of their 150 possum control areas every year in possum habitat using wax tags. Control is usually required every two years; they defer areas below 2.5% RTC for another year.

The council has shifted to three-year contracts to provide more business continuity for the three contractors who do their work. Staff discuss with contractors what areas need to be done and where the contractors prefer to work. They coordinate as much as possible with contractors because, “There is real benefit to us if contractors are successful.” Staff believe there is enough competition to keep prices realistic.

Senior Horizons biosecurity staff came from Taranaki Regional Council and have considerable experience with the “self-help” model that HBRC’s programme is based on. Staff believe the occupier responsibility model has a higher risk of failure because some owners will do the work poorly or not at all. With contractors there is more certainty that work will be done properly, and owners don’t have the bother of organising work themselves.

#### Taranaki Regional Council

Control method – Largely landowner control, but contractors or council staff may be used if landowners fail to meet requirements.

RPMP objective – To sustainably control possum numbers on land within the self-help possum control programme to avoid or minimise adverse effects on pastoral production, animal health, and indigenous biodiversity.

RTC target level of service – 10% RTC

Monitoring frequency – annual random sampling, coupled with targeting high-risk properties

Area under control – approximately 241,000 ha across 4,500 properties

Council Cost – TRC’s biosecurity budgets are not distinguished by species or even monitoring versus control<sup>21</sup>

Funded by – 100% general rate

#### Analysis

The HBRC possum control area programme was modelled on Taranaki Regional Council’s “self-help” programme, which began in the early 1990s. As a result, the programmes have some similarities but also several striking differences.

One of the differences is simply topography and scale. Most properties in the TRC programme are reasonably small, an average of 54 ha, and often have very little possum habitat. The average HBRC property is five times as large as in TRC and the total PCA area is almost three times as large. Topography in Taranaki is relatively easy compared to Hawke’s Bay hill country.

<sup>21</sup> Pers comm, Steve Ellis, TRC

Operationally, TRC is much more prepared to use Biosecurity Act enforcement powers against landowners who do not meet their possum control obligations. The council issues about 25-30 “notices of direction” per year after landowners have failed a possum monitor. Landowners are offered a choice of having council staff do control or getting a contractor. Most choose to engage a contractor because it is less expensive.

Taranaki has a three-pronged monitoring strategy:

- Targeted monitoring of properties where there is a history of non-compliance or some other reason to suspect the work will not be done
- Targeted monitoring where there is reason to believe control has not been done to a sufficiently high standard
- Random monitoring guided by a computer model that takes all habitat within the possum control areas<sup>22</sup> and randomly assigns 300-350 monitoring lines across that area.

TRC staff could not say what percentage of habitat is monitored annually, but they are confident it gives them a statistically valid sample every year. However, staff also said it is important to have random sampling backed up by the targeted monitoring of high-risk properties.

The residual trap catch target Taranaki has set in their RPMP is 10%; monitoring typically finds RTC levels in the 5-6% range, according to staff.

Broadly speaking, an RTC of 10% will only reduce possum damage to pasture and forest canopies, which TRC acknowledges in their RPMP.<sup>23</sup> An RTC of 4-5% will protect a wider range of vegetation, as well as reducing predation on birds, reptiles and invertebrates. A much lower RTC is necessary to protect some particularly vulnerable species of animals and plants. Kokako, for example, require an RTC of <1%.<sup>24</sup> Many regional councils tend to set RTC levels at 4-5% with the expectation that it will provide broad brush biodiversity gains. Taranaki’s Key Native Ecosystems programme targets 1-2% RTC in these areas with significant indigenous biodiversity values.

“Free riding,” where landowners do little or nothing and rely on their neighbours’ efforts to keep possum numbers low is acknowledged as a real risk in Taranaki (as in Hawke’s Bay). Staff reiterated the need for robust, targeted monitoring -- “You catch more people than you would think.”

Taranaki staff also said that if they were redesigning the possum programme from scratch, they would ideally have contractors do large areas of maintenance control. This move away from the “self-help” concept would improve the efficiency of the programme and reflect the reality that farmers are often too busy to make possum control a priority.

Like most councils, the original reason for starting possum control in Taranaki was bovine TB, however, that threat has been absent for many years. The programme’s benefits now are largely amenity, as well as biodiversity in native habitat fragments and riparian margins.

## OSPRI

Summary – Multi-year contracts over large areas.

Objective – Eradication of bovine TB

<sup>22</sup> Based on the Land Cover Database

<sup>23</sup> Regional Pest Management Plan for Taranaki, February 2018, page 25

<sup>24</sup> Potential translocation sites for kokako in Taranaki, DOC Science Internal Series 169, page 12

RTC target – 2% RTC over time to achieve disease freedom

Area under control – 702,000 ha<sup>25</sup>

Cost – \$6.5 million<sup>26</sup>

### Analysis

The OSPRI contracting model is similar to Waikato Regional Council, although with very different objectives.

OSPRI's TBfree programme is delivered through TB management areas (TMAs). Each TMA has is made up of one or more Vector Control Zones (VCZs) within which possum control or wildlife survey operations are be carried out.

According to OSPRI staff, the TMA system was initiated when the agency realised it was dealing with numerous small contractors who had limited health and safety policies in place and who were often not getting enough regular work to be financially sustainable. Most contractors wanted larger areas and longer contracts, which is what OSPRI has moved to. Most possum control contracts in the Hawke's Bay are three years. Costs average \$20/ha spread across all ground control blocks, including areas without habitat. Blocks with a higher habitat percentage will be more per ha and conversely blocks with minimal habitat will be less.

OSPRI staff said they are looking at options to revise the TMA model by encouraging more contractor input into operational planning and having less intensive oversight. Now, three years in to the TMA system, OSPRI feels they have more experience and better systems in place. The current approach is too prescriptive, for example with three compliance audits per year.

OSPRI believes the larger, longer-term contracts provide more surety for the agency and for contractors. The whole industry has upskilled, particularly in health and safety, which has reduced risks. Some contracted costs have increased because OSPRI has asked contractors to do more (e.g., communications work cost shifted from OSPRI to contractors), but the agency believes it gets better outcomes and certainty in return.

### Spending on possum control in the Hawke's Bay Region

Calculating the true cost of possum control in Hawke's Bay requires an estimate of all costs across all parts of the system. Those individual component costs would then need to be added together to get a sense of total cost to the regional community.

A detailed analysis of costs was not part of the scope of this report. However, you cannot analyse alternatives to the current HBRC possum control model without some reference to cost.

At the very beginning of the HBRC PCA programme, a \$2/ha figure was adopted as a coarse estimate of the direct cost to a landowner of using a possum control contractor. The figure has not been updated for inflation or otherwise adjusted since then.

However, the \$2/ha figure is a "floor." In many cases, the contractor's costs are greater and HBRC subsidises the actual cost of the work. For example, one contractor recently controlled possums on a 245 ha Hawke's Bay farm where the owner paid \$490 and the council paid \$510, or \$4 per ha in total.

<sup>25</sup> North Island ground control, 2018/19

<sup>26</sup> <https://ospri.co.nz/assets/Uploads/Documents/OSPRI-Annual-Report-2018-2019.pdf>

Estimates done for this report show that a landowner who does their own control is paying at least \$2 per hectare, when their direct costs are added to the council's targeted rate requirement.<sup>27</sup> This estimate may be on the low end of real costs. In its RPMP submission, Federated Farmers quoted Ministry for Primary Industries' report that on average farmers spend \$8 per hectare per year on weed and animal pest management.

None of these estimates account for the "uncertainty cost" associated with the landowner responsibility model. What can be said is that benchmarking done in 2020 strongly suggests that HBRC is spending too little on possum control, compared to regional councils that have similar objectives and operational needs. The average regional council possum control budget is \$2 million, while HBRC's programme is roughly half that amount.

#### How control costs are described

Possum control costs are commonly described in per hectare terms. This is a practical way to straightforwardly present what is in reality a complex calculation. For example, doing control on relatively flat farmland with little habitat is obviously a very different task than control in steep, thick bush.

Land cover across the PCA programme is heavily weighted toward types that will provide little or no habitat for possums. "High Producing Exotic Grassland" accounts for 69% of the total PCA area, "Low Producing Grassland" is 2% and "Orchard, Vineyard or Other Perennial Crop" another 2%.<sup>28</sup> If the hypothetical farm above is typical of PCA properties, then approximately 73% (219 ha) would, in most cases, be unlikely to need much possum control work.<sup>29</sup> The cost per worked hectare would be about \$15. Recent HBRC monitoring<sup>30</sup> demonstrated this complexity when it found relatively flat, highly productive land surrounded by shelter belts that harbour high possum densities.

#### Possum control funding in Hawke's Bay

Hawke's Bay Regional Council has determined that its possum control programme has spin off benefits for the environment, biodiversity, public health and the regional economy. This diffuse, regional benefit is assessed at 30% of the cost of the programme and is funded from the general rate, which is struck on land value rather than capital value. In contrast, 70% of costs are assessed on owners of productive land who benefit directly from low pest densities and increased productivity. Those costs are collected from an area-based differential targeted rate on all rural properties greater than 4ha.

The rationale for exempting properties 4ha and below is questionable. Research shows that even small properties with bush, willows or manuka can act as exacerbators that significantly increase possum numbers. A 1997 study of possums on Hawke's Bay farmland found that small patches of scrub and forest provide refuges for possums, and are capable of holding high numbers of animals.

<sup>27</sup> Attempting to capture "system-wide" costs is complicated and heavily influenced by the value assigned to the property owner's own time. Here the value is set at \$25 per hour.

<sup>28</sup> Data provided by HBRC staff

<sup>29</sup> Acknowledging that the Land Cover Database is not 100% accurate. There have been examples in Hawke's Bay where LCDB classifications suggested an area had little possum habitat, but subsequent control operations found high possum numbers.

<sup>30</sup> Ongaonga and Tikokino

In this study, 85% of possums on two farms were found in the swamp and willow habitats that comprised only 6% of the study area.<sup>31</sup>

Forestry blocks are not exempt from the targeted rate but they do enjoy a discount. According to HBRC staff, forestry properties pay less per hectare for the pest animal targeted rate compared to farms. Land that is used for forestry<sup>32</sup> is charged 74.26 cents per hectare, compared to 204.79 cents for rural land greater than 4 ha.<sup>33</sup>

In addition, according to HBRC staff, the amount of the pest control targeted rate allocated for collection from properties tagged as forestry blocks is capped at 5.5% of the total revenue requirement. This treatment appears to have first come in through the 2012 LTP. However, staff were unable to find documentation on why forestry has been treated this way or why the 5.5% figure was chosen.<sup>34</sup>

As a general rule, forest owners in New Zealand are less concerned by high possum numbers than are farmers because mature pine plantations are at minimal risk. Possums can inflict various forms of damage on *Pinus radiata* plantations; however, the greatest risk occurs when the plants are young.

Nevertheless, production forests with high possum numbers can create reinvasion problems for neighbouring areas and generally exacerbate the damage done to pasture, horticulture and biodiversity. Evidence cited by HBRC staff and contractors suggests that the way forestry is treated in relation to possum control complicates and may compromise efficiency and effectiveness. The council's policies should be reviewed to more accurately reflect the exacerbation risk of leaving large untreated areas within or adjacent to the PCA programme.

## Discussion and Conclusions

As discussed in the previous "Efficiency and Effectiveness" report, councils decide for themselves what is appropriate pest management in the context of their region, their economy and their community's expectations. A full analysis of those factors is beyond the scope of this report.

However, the report can draw conclusions about the strengths and weaknesses of different approaches to possum control. From an operational standpoint, the current HBRC approach to possum control has weaknesses that make it more difficult to implement and to achieve council objectives.

### The landowner responsibility model

The landowner responsibility model is intrinsically harder to manage and monitor than having work done by contractors or council staff. This is partly because there are numerically more landowners potentially doing control on their own properties than the number of contractors it would take to control a similar sized area.

One 3,000 ha PCA in Hawke's Bay has 133 properties.<sup>35</sup> This is an extreme example, the average per PCA is about 50 properties, but the point remains. In terms of ensuring that control is done in the

<sup>31</sup> R. E. Brockie, G. D. Ward & P. E. Cowan (1997) Possums (*Trichosurus vulpecula*) on Hawke's Bay farmland: Spatial distribution and population structure before and after a control operation, *Journal of the Royal Society of New Zealand*, 27:2, 181-191, DOI: 10.1080/03014223.1997.9517531

<sup>32</sup> Applied to forestry over 40 hectares

<sup>33</sup> FY 2020/21 figures

<sup>34</sup> Amy Allan, pers. comm.

<sup>35</sup> Bridge Pa

right way at the right time, a large number of small properties introduces considerable uncertainty into the system. There are about 4,300 properties in the current PCA programme;<sup>36</sup> monitoring the performance of each of them would be a daunting task if they all chose to do their own possum control. In contrast, three to five contractors could cover those 400,000 hectares, dramatically reducing the performance monitoring costs.

A related issue is that for most landowners, possum control will be just one of the many jobs to be done on the property; even with the best of intentions, some owners will do possum control haphazardly or not at all. Contractors, in contrast, will be more singularly focused on meeting their performance targets in order to get paid.

This does not reflect badly on farmers; it simply acknowledges the reality for anyone whose primary business is not possum control. This was noted by Taranaki Regional Council staff and also is illustrated by the quote below from a current Waikato Regional Councillor who is a farmer in a possum control area near Cambridge that is now serviced by contractors:

*"The contractor had helped us set up a network of bait stations, and we were all set to carry on and do the bulk of the control work ourselves. Two of us spent days delivering bags of brodifacoum bait to landowners, which the Regional Council was providing at cost. We were initially pretty enthusiastic, however when we went back to visit the landowners several months later, we found that despite the best of intentions, the farmers had simply not found time to do the work, and most of the bait was still sitting in the back of farm sheds. A subsequent monitor had shown that possum numbers had increased, and when we all got together to work out where to next, we all ended up admitting that we needed to get a professional contractor to do the work for us. We were simply too busy with our day-to-day farm work to find the time."<sup>37</sup>*

The landowner responsibility model also undermines the effectiveness of the council's compliance monitoring programme because it is technically impossible to monitor on properties 4ha and smaller. There simply is not enough area on those small properties to place possum monitoring lines. As a result, the council cannot easily assess those landowners' compliance with RPMP requirements even though those properties may have large possum populations.

It is worth noting that HBRC staff have twice in the last 20 years – 2001 and 2006 -- proposed moving to a contractor-based model. Nevertheless, that transition did not take place. This suggests that the Council has been aware of the challenges and inefficiency of the current PCA system and that those trade-offs have been deemed acceptable. Staff have tried to address the limitations and risks of the current model through operational changes such as refined possum monitoring and increased engagement with every landowner within a PCA.

#### Insufficient monitoring

An additional weakness is that HBRC's ability to monitor actual possum numbers in its control areas has diminished as the total programme area has become larger. Staff report that currently only about 10% of the area is monitored every year and that the scale of the monitoring programme is decided by available budget annually. Possum population trends can be estimated to some degree, but this relatively high level of uncertainty does create risk. For contrast, Horizons Regional Council

<sup>36</sup> Excluding PCAs that have gone back to OSPRI.

<sup>37</sup> Stu Kneebone, Waikato Regional Councillor

reported that all possum control operations are monitored every four years; Greater Wellington reported that it monitors about 40% annually.

In addition to doing more monitoring, stratified random sampling to target prime habitat also would reduce uncertainty. Stratified sampling is a type of probability sampling that improves precision (reducing error) relative to simple random sampling. An area is divided into non-overlapping groups, or strata, along a relevant dimension (such as quality of possum habitat). A random sample is chosen from the relevant stratum. This technique ensures that the targeted areas are sufficiently represented in the sample.

A possum sampling protocol was designed by Manaaki Whenua - Landcare Research for Environment Southland some years ago. A similar project should be considered for Hawke's Bay.<sup>38</sup>

A further concern relates to the fact that improved biodiversity is an important outcome from the HBRC possum control programme. However, the council does not have a robust region-wide biodiversity monitoring programme to help understand the effect of its management programmes, including possum control. Nor does the council monitor biodiversity in the fragments of native habitat that comprise about 11% of the PCA area and where the benefits of possum control should be most evident. Understanding biodiversity trends in managed and unmanaged areas would help the council evaluate the effectiveness of its programmes.

Lastly, HBRC has an RPMP rule which requires properties to maintain possums at or below 4% RTC when all the monitoring lines on the property are averaged. This has the effect of making it easier for large properties, which will have more monitoring lines, to pass a monitor even if they have high possum numbers in one area.

For example, a large PCA property might require 10 monitoring lines. If nine of those lines return a low RTC of 2% but one line detects a quite high RTC of 20%, the property still passes with an average RTC of 3.8%. A smaller property with five lines can have four at 2% and one at 20% and fail with an average RTC of 5.6%.

One solution to this unintended consequence would be to amend the rule to require an average 4% RTC and no single line higher than a given figure.

#### PCA exemptions and subsidies

Under HBRC's current policy, both production forestry and smaller rural properties are to some degree exempt from possum control rules. Forestry properties need to control possums to 5% RTC (not 4%) and only in a 500-meter buffer from their boundary. Forestry also benefits from a capped targeted rate.

Private land four ha or less is completely exempt from the Regional Pest Management Plan rules for possum control. As noted above, small properties that include good habitat can harbour large numbers of possums that will affect neighbouring, larger properties. The exemption also can create a perception and credibility issue for larger land owners. One RPMP submitter noted: "When you have areas of multiple lifestyle properties backing onto one another and then [bordering] a large farm it makes life rather difficult for a farmer to meet his obligations ... if you live in a rural area you abide by the same rules as everyone else. No one should be exempt."<sup>39</sup>

<sup>38</sup> Southland Regional Council Possum Monitoring Programme, Bruce Warburton and Guy Forrester, MWLR, November 2008

<sup>39</sup> Donald Bauckam

In their RPMP submission, Federated Farmers questioned how the 500-meter buffer could be effective, given that "highly mobile animals and can move in and out of this 500m mark."<sup>40</sup>

Operational issues aside, the forestry distinction seems unjustified from a policy logic perspective. Under HBRC regulations,<sup>41</sup> the 5% RTC/500-meter buffer option, which effectively removes properties from the PCA programme, is available only to production forestry. It is not clear why this exemption should not be available to a farmer who is, for whatever reason, unconcerned by high possum numbers but who is willing to control spread to adjoining properties.

Overall, these exemptions complicate the implementation of an efficient and effective possum control programme and should be reviewed. A move away from regulating possum numbers property by property would make debates about such exemptions unnecessary.

Finally, the logic and transparency of the two subsidy schemes is questionable. The initial rationale for the subsidies seems to be to encourage landowners to agree to the creation of a formal possum control area. However, possum control then becomes a regulatory requirement under the RPMP. By continuing to pay 40% of a landowner's bait costs or anything over \$2/ha for a contractor, HBRC simply transfers those regulatory compliance costs to other ratepayers. Perhaps the initial subsidies should have a sunset date after a PCA has been created. Or, if ongoing subsidies for compliance justifiably reflect some larger public good, then the costs should be clearly assigned to the portion of the general rate that pays for pest management work.

#### Use of toxins

Linked to the landowner responsibility model is the widespread use of brodifacoum. Licensed contractors are able to use a wider range of toxins than farmers and other members of the public. This allows them to use the best tool for each site, following best practice. This includes removing old bait and making sure stock cannot access bait.

Nationwide, brodifacoum is the primary toxin used for ongoing possum control. It is highly effective but with a known ability to impact native and introduced non-target wildlife.<sup>42</sup> A formal reassessment of the regulatory status of brodifacoum is under way<sup>43</sup> and could well lead to restrictions on its use by the public. One of the main drivers of this reassessment is the risk of brodifacoum being consumed by stock that are destined for human consumption.<sup>44</sup>

This report concludes that there is a reasonable chance that the use of brodifacoum will be restricted in the future. Depending on the extent of those restrictions, the cost and effectiveness of HBRC's possum control programme could be dramatically affected. For example, a Controlled Substance Licence (CSL) is required to possess certain vertebrate toxic agents (e.g., Feratox) and comes with significant costs. For example, HBRC recently subsidised a landowner who got a licence, which cost around \$650. Reports from DOC are that it can cost over \$1,000 to renew a licence.<sup>45</sup>

<sup>40</sup> Decision Report on the Hawke's Bay Regional Pest Management Plan - Appendix 1 – Hearing Panel Recommendations on Submissions

<sup>41</sup> Hawke's Bay Regional Possum Control Technical Protocol (PN 4969)

<sup>42</sup> "Environmental fate and residual persistence of brodifacoum in wildlife," prepared for Hawke's Bay Regional Council, <https://envirolink.govt.nz/assets/Envirolink/884-HBRC131-Environmental-fate-of-brodifacoum-in-wildlife.pdf>

<sup>43</sup> <https://www.mpi.govt.nz/dmsdocument/33439/direct>

<sup>44</sup> MPI presentation to the Regional Council Biosecurity Working Group.

<sup>45</sup> HBRC staff pers comm.

If brodifacoum use is restricted in the future, it seems very likely that many landowners will not go through the trouble and expense to get a license, further complicating the landowner responsibility model of possum control.

#### Funding for possum control

A full analysis of the costs and benefits of the HBRC possum control programme is well beyond the scope of this project. However, a few conclusions do stand out.

From the previous "Efficiency and Effectiveness" survey, the average total possum control budget from other councils was \$2 million; HBRC's programme is roughly half that amount. The budget for HBRC's possum programme also is less than all but one of its immediate North Island neighbours.

What is an appropriate budget for possum control involves a number of considerations, not the least of which is being clear about the desired outcomes. An evaluation of the relative importance of those outcomes is best left to council processes. However, the benchmarking previously done strongly suggests that HBRC is spending too little on possum control, compared to councils that have similar objectives and operational needs.

If the current landowner responsibility/PCA model is underfunded, the question becomes whether the model is inherently flawed or whether it could be made more efficient and effective through greater resourcing. There is no doubt that HBRC staff feel over-stretched in several areas, including the possum programme. In the efficiency and effectiveness survey done last year, an overwhelming majority of staff (13 of 17 responses) felt their team did not have enough people to do their job properly. This suggests that the delivery of the PCA programme would improve if given additional resources.

However, the landowner responsibility model has some intrinsic features that no amount of resourcing can overcome. The most significant is that landowners will have very different levels of commitment and ability to best-practice possum control. This inevitably leads to inconsistent levels of control and greater uncertainty about whether the desired outcomes are being achieved. This uncertainty requires the council to have a more intense monitoring programme than would be needed for a smaller number of professional contractors.

The landowner responsibility model also requires an enforcement process that can be used in cases of non-compliance. However, councils are traditionally reluctant to take enforcement actions; a contractor model would remove this dilemma by linking payment to performance. Instead of monitoring potentially thousands of landowners for individual compliance, the council would be able to monitor for outcomes across large parts of the region.

Regardless of which model is used, however, quantifying the relative importance of the outcomes sought from possum control would provide an opportunity to review the programme's funding model. For example, if biodiversity enhancement and protection is becoming more important (as has been reflected in an increased programme budget) then there would be an argument for spreading those costs more widely across the regional community.

#### Comparative costs

A detailed analysis of the costs of different models of possum control was outside the scope of this report. As noted, however, you cannot analyse alternatives to the current HBRC possum control model without some reference to cost.

To inform this review, experienced contractors were asked to estimate costs to control possums across a representative 87,000-ha area of Hawke's Bay.<sup>46</sup> The average cost estimate received was \$7-8/ha, with a number of caveats and variables noted.

The responses received are excerpted below.

#### Contractor A

*I think you looking at about \$7-8/ha for some of the easier stuff and \$11-12/ha for the more intensive work areas. You would be getting higher pricing in the first 1-2 years, as numbers are brought under control, contractors learn the block then expect that once the contractor has a good handle on the population, where the risk areas are, possibly some more regular control in hotspots could prevent populations establishing again you would then see an overall reducing in effort and cost in years 3-5+.*

*Note that farmers might not see work every year on their farm.*

*Our experience is that by starting and stopping control every few years you never get ahead, and it keeps costing the same, if not more to get below 4-5%RTC.*

*Obviously continual availability of brodifacoum will be critical to this.*

*Consider an inputs-based, collaborative approach with contractors. This could reduce costs with little increased risk.*

#### Contractor B

*Filling and pulse feeding existing bait station networks and adding to them where necessary would be the best bang for buck.*

*This is what has been happening in most areas with good results.*

*Areas where toxins are not allowed to be used will require trapping.*

*DOC boundaries will need buffers put in place and robust pre monitoring of these areas.*

*Price would be \$3/ha.*

#### Contractor C

*The 60km unprotected Ruahine boundary would make the target difficult in the western blocks. This would have to be reworked thoroughly every year.*

*If the test area was away from the ranges, the cost would drop dramatically.*

*Price per year (averaged over 5 years) -- \$862,747*

*Average price per ha (averaged over 5 years) -- \$9.85*

<sup>46</sup> GIS files and property information were provided by HBRC staff. Contractors were told that:

- Average RTC across the area would be no higher than 4% when they began their work
- This would be an outcome-based contract, meaning that post-operational RTC must be less than 4%, with no single line to exceed three possums
- The contract would be guaranteed for three years, with a two-year right of renewal before re-tendering.

### Community satisfaction

Testing the level of community satisfaction with the current PCA programme was not part of the brief for this report. In the earlier “Efficiency and Effectiveness” report, which was dominated by farmers, the results from the admittedly small sample showed a clear unease about the direction of the programme. HBRC staff also indicated that the PCA programme is starting to slip and that its effectiveness will decline if changes are not made. Taken together, this suggests that there is at least a portion of the community for whom the programme is not meeting expectations.

However, in a 2018 submission to the draft Regional Pest Management Plan, Federated Farmers said the current approach to possum control is working and that their members have a lot of praise for the PCA programme.

Overall, it is clear that this issue warrants a more in-depth conversation with a range of stakeholders.

## Recommendations

### Primary Recommendation

The primary recommendation of this report is that for greater operational efficiency and certainty of achieving outcomes Hawke’s Bay Regional Council should move to a contractor-based model for possum control.

No operational model will be perfect, but the landowner responsibility model has inherent challenges that make it harder to manage and to be certain of high-quality outcomes. In contrast, the professional contractor model is very likely to be more efficient in terms of cost and effective in terms of outcome. Nevertheless, operational efficiency is only one consideration. Short-term affordability is another consideration, as is community buy in.

The landowner responsibility model could be the “right” system for Hawke’s Bay; as long as the community and the council are fully aware of the trade-offs. An essential step would be consultation with the community, including a discussion of the costs of the PCA programme, the various benefits it provides and the different options for funding the work.

### Secondary recommendation

To facilitate that community discussion, a funding options analysis should be done to examine the basis for the current rating system for the PCA programme. For example, is the current area-based targeted rate model still appropriate or would capital value rating better capture the benefits provided by possum control? Similarly, should 4ha properties be included in the targeted rate? Have the beneficiaries and exacerbators been appropriately assessed, particularly given the council’s greater emphasis on biodiversity enhancement and the risk posed by forestry properties?

These considerations will affect how the financial impact of any new approach to possum control would be spread across the community.

### Recommendations if HBRC retains the landowner responsibility model

If HBRC retains the landowner model of possum control, there are steps that should be taken to improve efficiency and effectiveness:

- Bring forestry fully into the PCA programme and remove the current rating discount that forestry receives
- Develop methods for efficient monitoring of small properties (less than 4 ha)
- Amend the monitoring rules to require no single line higher than a given figure

- Remove the financial subsidies for the purchase of bait and the use of contractors
- Increase the PCA budget to increase engagement with landowners and
- Increase the monitoring budget so every property in a PCA is monitored at least every four years.

#### Cross-cutting programmatic recommendations

Regardless of whether HBRC adopts a contractor-based model or retains the current approach, the recommendations below would help the programme operate more effectively and reduce risk:

- Bring forestry fully into the possum control programme and remove the current rating discount that forestry receives
- Develop and implement an appropriate stratified random possum monitoring design to determine the level of monitoring required to give sufficiently high confidence that the results for any given year accurately reflect conditions across the relevant areas
- Develop and implement a biodiversity monitoring programme for managed and unmanaged areas in Hawke's Bay to help the council evaluate the effectiveness of its programmes
- Develop operational alternatives for a future in which brodifacoum is no longer easily available as the primary possum control tool.

--ENDS--