

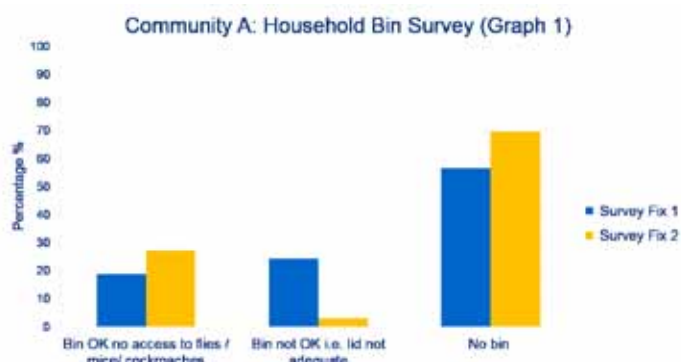
Trial solid waste management and pest control projects in southern NSW

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Background

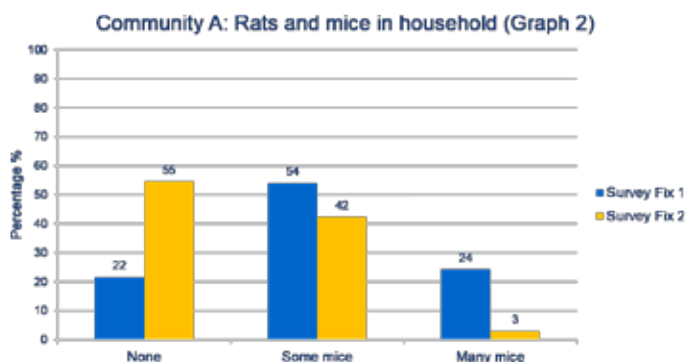
The NSW Ministry of Health funds Housing for Health (HfH) projects for Aboriginal communities in NSW. Pests were identified as an ongoing problem in some communities, potentially linked to ongoing issues around solid waste management. This presentation is the story of the pest and waste projects trialled in two southern NSW communities (Community A & B), built on the identified needs arising from HfH project data and through consultation with the Local Aboriginal Land Councils (LALCs) and respective communities.

Using Community A as an example, the HfH data on the presence and adequacy of household bins in Graph 1 demonstrates a large percentage of homes either had no bin or a bin that was not adequate (i.e. no lid, or too small).



Graph 1.

In Graph 2, the HfH data also demonstrates a large percentage of households either have the presence of some mice or have many mice in their homes.



Graph 2.

Community A also has an unmanned landfill located in close proximity to the community, as seen in the image below, which is considered a contributor to the numbers of rats and mice.



With the HfH data and community consultation in mind, the aims of the pest and waste projects were formulated. The aim of the projects was to remove harbourage/breeding sites and food sources for pests in and around the homes, improve how waste is managed in the communities and hopefully reduce the number of pests.

In the early stages of any project, a good process to go through is to project some of the outcomes you hope to achieve. This can often provide focus when considering the project steps or stages needed to deliver these outcomes. What did we hope the project would achieve?

The projected public and environmental health outcomes were a reduction in the potential for illness and disease caused through exposure to pests, reduction in the potential for house fires caused through rodent activity, and the reduction in the number of pests in the community.

The partners involved in the projects included LALCs (contribution to community employment, employment administration), Ministry of Health - Aboriginal Environmental Health Unit (funding, project design and management), Murrumbidgee Local Health District - Public Health Unit (project design, support and ongoing liaison), Murray River Council (Community A - contributing costs of community clean-up, landfill design support and ongoing management), Eurobodalla Shire Council (Community B - project support) and each of the communities.

Evaluation is an important component of any project. We used three processes of evaluation for these projects to determine the effectiveness and sustainability of the projects. Firstly, we did a qualitative assessment of pest and solid waste management before and after community clean-up and pest control/treatment via a survey of residents. The second was a quantitative assessment of waste (i.e. volume of waste removed from community through clean-up). The third was the quantitative assessment of type and number of pests in households via glue boards (130mm x 70mm) before and after community clean-up/pest control.

The key stages of the projects were:

- Consultation with the LALC, community and local Councils (A&B)
- Community involvement in all project stages, from project design to clean-up and evaluation. In both communities, this was achieved through a project working group involving regular meetings with all partners and members of the community (A&B)
- Resident pest and waste survey and quantitative pest assessment. Both the survey and assessment were conducted before and after the community clean-up and pest control (A&B)
- Community clean-up including houses, yards, footpath verges and local landfill. Members of the community were employed to assist in the clean-up. Household clean-up kits to residents (A&B)
- Slashing and mowing lawns and footpath verges to eliminate harbourage areas for pests around homes (A&B)
- Elimination of access points for pests to get into and around the home (A&B)
- Pest control, including an education component - providing information on ongoing treatment, potential for fire, and spread of disease risks associated with pests (A&B)
- Joint funding submission from project partners for sustainable ongoing management of the community landfill (A)

Project implementation

Meeting with community at all key stages throughout the project was important. Tim chatted with the communities about who was going to be involved in the project working group and who was going to be a part of the program and have the pest control done on their home.

To make things easier for the working groups, a kit was allocated to each team, so each team had one of these kits to help lift the heavy furniture (the trolley was very helpful for this) a wheelbarrow to make it easier to take out large amounts at a time, dust masks, heavy duty garbage bags, a shovel and a metal rake to make cleaning easier.

Residents placed waste out on the verge and projects working groups loaded it into a trailer and it was taken to a skip bin and recyclables were recovered and stored. Some of the residents were not able to lift some of the heavy stuff, and the workers helped with that, going inside and carrying furniture out, loading the waste into the trailer and sorting out the recyclables.

We filled 12 cubic metre skip bins three times over three days in the smaller community which involved eight houses. We also had some space left over in the skip bin at the end of clean-up, and some of the working groups cleaned up their own waste and filled the skip bin.

Various information was handed out at key stages of the project which explained what was happening next. The three main cockroaches we have a problem with are the German, American and smokeybrown cockroaches. They live in old rubbish piles, unused cars and anywhere that's dark, moist and has a food supply. Once they get inside the house and start to breed, they can be very hard to eradicate.

We gave out clean-up kits to each household in readiness for pest control, and an important part of this kit was the bin with the lid, to keep pests out of the food scraps in the kitchen.

Pest control was done inside and outside the houses to eliminate cockroaches, ants, spiders, flies and wasps. The home owners left their home for a few hours while this was undertaken and they were required to clear out cupboards and cover food stuff.

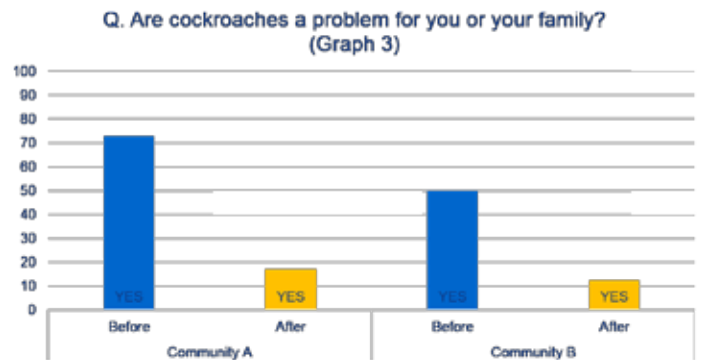
Contractors were engaged to slash and mow the properties to remove harbourage sites.

Contractors were also engaged to eliminate access points, including behind the stove, which was then covered by fibrous cement sheeting to stop pests gaining access, as well as sealing gaps in shelving where cockroaches like to hide.

Results

Results from the survey showed 59% in Community A used a kitchen bin with a lid, and 88% in Community B. Community A had 89% with Council waste services, community B 100%. 35% of community used the local tip.

Results for both communities were varied, as shown by Graph 3, with over 70% in Community A having a problem with cockroaches and only 16% after treatment in Community B, 55% had problems before treatment and only 10% after.



Graph 3.

80 percent of Community A was aware that cockroaches spread germs and after treatment the survey showed a drop in awareness, which was unusual and possibly due to a different person in the house being surveyed from the first survey. Seventy-five per cent of residents surveyed at Community B were aware that they were a problem, and after treatment this was 100%.

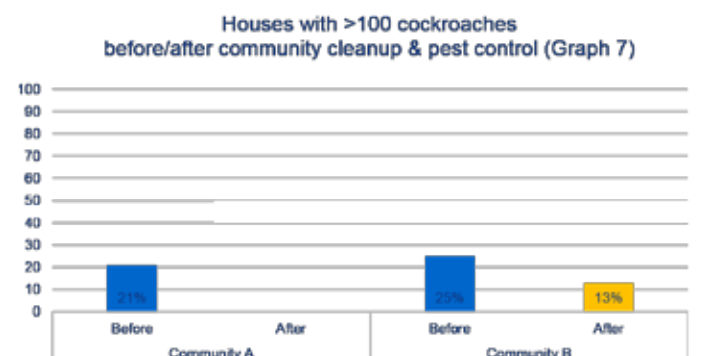
Before treatment, 41% of Community A said they had a problem with cockroaches getting into their food, and after treatment only 10% reported a problem. In Community B, 12% reported a problem with them getting into food, and none had a problem after treatment.

Clean-up from Community A was undertaken on 32 houses with 17 workers from the local community, and they filled 12 skip bins with 28.38 tonnes of waste. Eight houses in Community B had eight workers from the community who worked to fill three skip bins with 4.11 tonnes of waste.

A total of 27 properties in Community A had slashing and mowing done, with 26 houses receiving sealing up and elimination of access points, and 25 houses had pest control treatment. In Community B, eight properties had slashing and mowing, eight had elimination of access points and harbourage areas, and 25 had pest control treatment.

Before clean-up, Community A had 24 houses with glue traps installed, with 92% having cockroaches caught, and of those 21% had over 100 caught. Community B had glue traps installed in eight houses, with 38% of those having cockroaches caught and 25% with more than 100 caught.

Of the houses in Community A, Graph 4 shows 21% had more than 100 cockroaches before clean-up and pest control, and the same after. Before treatment, Community B had 25% with more than 100 cockroaches and only 13% had more than 100 caught after treatment. I think this was because there was one house that did not want any chemical treatment inside the house, and the breeding cycle continued.



Graph 4.

The glue traps were a good way to get a count of the actual problem; they were placed under the sink, stove, fridge and washing machine, and we noticed a few were going missing. We found one with mouse fur on it and noticed they must have become stuck and ran off with the traps.



Pest numbers after the clean-up was done showed Community A had 10 glue traps installed, with 40% having cockroaches caught and zero of those houses with more than 100. In Community B's eight houses, 63% had cockroaches caught and only 13% (one house) had more than 100.

Conclusion

These projects provided some valuable lessons in what we might do differently if we were to run either a small-scale project (eight houses or less) or a large-scale project (whole of community) in the future. With the large Community A (32 houses), where accessing all houses to set and read glue traps became an issue, we would still set the traps but instead of the project working group members reading the traps we would get the pest controller to read the traps, while he is carrying out treatment, as this would require one less visit to each of the properties. At Community B, where there were only eight houses, we had no such problem as all houses were more engaged with the project, having volunteered to participate. We would also have instigated a sign up process for households in the larger community when household clean-up kits were being distributed, to clearly identify and quantify support by these households for the entirety of the project and this sustainable approach to eliminating pests and keeping them out of the house. Some houses (even though they had a serious problem with pests and wanted the clean-up and pest control services) did not see this program as priority for them (i.e., perhaps other issues were more important at this time).

Also, in Community B, where we only had funding for eight houses out of 31 in the community, the potential participants had to attend a briefing session. We had seven participants and they decided that rather than not utilise all funding available, they nominated a house to be included where they knew there was a problem with pests. Anecdotal observations of the conditions in this house and behaviour of residents indicated no behavioural change after the clean-up, pest treatment, mowing of lawns and sealing access and harbourage points. The glue trap results for this house supported our observations. So, without 'buy-in' by the residents, even a systematic approach to eliminating pests will not solve the pest problem over the longer term.

At each community, we set up a PWG that included members from different families and factions in each community. PWG members were paid from project funds to attend meetings at all stages and assisted with consultation, selecting workers for the clean-up, accessing houses, filling in surveys, setting and reading glue traps

and handing out and explaining educational resources. The PWG members became extremely knowledgeable about all matters to do with pests in their communities, so we believe we did leave a legacy of knowledge at both communities. The glue trap results clearly showed these community members that it is possible to 'kick' pests out of your house and keep them out.

If a community housing provider or manager is intending to treat for pests in the houses on behalf of residents, then our results would indicate that, to make it sustainable and to maximise the effectiveness of pest treatment, the following should occur:

1. Buy-in from the householder, with some form of sign up process
2. Removal of clutter from the house and yard
3. Slashing and mowing of lawns
4. Sealing of access and harbourage points
5. Ensuring there is a kitchen bin with a lid and a household bin
6. Treatment for pests as required
7. Ongoing education about residents of what to do when the pests come back (i.e. use of readily available knock down and surface sprays to prevent the breeding cycle from starting again).

For more information

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Glossary

HfH Housing for Health
LALC Local Aboriginal Land Council
PWG project working group