Greater Sunraysia Regional Action Plan for Queensland Fruit Fly 2019-20.

# Purpose of the Regional Action Plan 2019-20

The Regional Action Plan (RAP) 2019-20 summarises the key activities required to continue reducing Queensland Fruit Fly (QFF) numbers in the Greater Sunraysia region with a focus on *managing the pest* to reduce its impact on productivity and in-turn enabling grower to produce a marketable product (domestic and overseas). This is a significant change from previous plans where the focus was on employing an *eradiation* response to re-instate the pest free status. A strategic planning forum in September 2018 identified that to achieve eradication would be difficult given the demonstrated ability of the fly to adapt to the local environment and the cost to achieve this would be in the order of tens of millions-of-dollars which are not currently available to the region.

This plan will implement targeted and financially sustainable programs primarily for the benefit of industry. However, benefits will also be realised by the broader community by reducing QFF pressure.

This RAP document will be used to consult with key stakeholders in encapsulating the broader collaborative effort within the region and will be the primary pathway for agencies and community groups to participate in the efforts in combating QFF. Eligible agencies seeking Victorian Government grants to address specific community issues will need to demonstrate the alignment of the proposed activity against the RAP.

This plan aligns with the Victorian “Managing fruit fly in Victoria Action Plan 2015-2020”. Specifically, the action contained in this plan fall in line with five of the action areas of the Statewide plan.

* Action 1.1 Develop partnerships between industry, community and government to ensure communication, cooperation, feedback and sustainable long-term funding for fruit fly management
* Action 1.2 Develop and implement a joint communication and engagement program (including a central information hub).
* Action 1.3 Develop and implement regionally specific fruit fly action plans which all stakeholders contribute to and own.
* Action 2.1 Review and implement the current best practice control and surveillance options for fruit fly management.
* Action 2.2 Conduct the required research and development to improve fruit fly control and surveillance options.
* Action 2.3 Establish and maintain an adequate regulation and compliance system to ensure responsibilities are met.

# Background to QFF management in the Greater Sunraysia region

The Greater Sunraysia Pest Free Area (GS PFA) was established in 2007 to enable domestic and international market access under Pest Free Area certification arrangements for key horticultural commodity groups against QFF and Mediterranean fruit fly (Medfly). The establishment of the GS PFA was a cooperative effort by Victorian, New South Wales (NSW) and Commonwealth agriculture departments of , the then Horticulture Australia, and the three key horticultural industries within the Sunraysia region - citrus, stone fruit and table grapes.

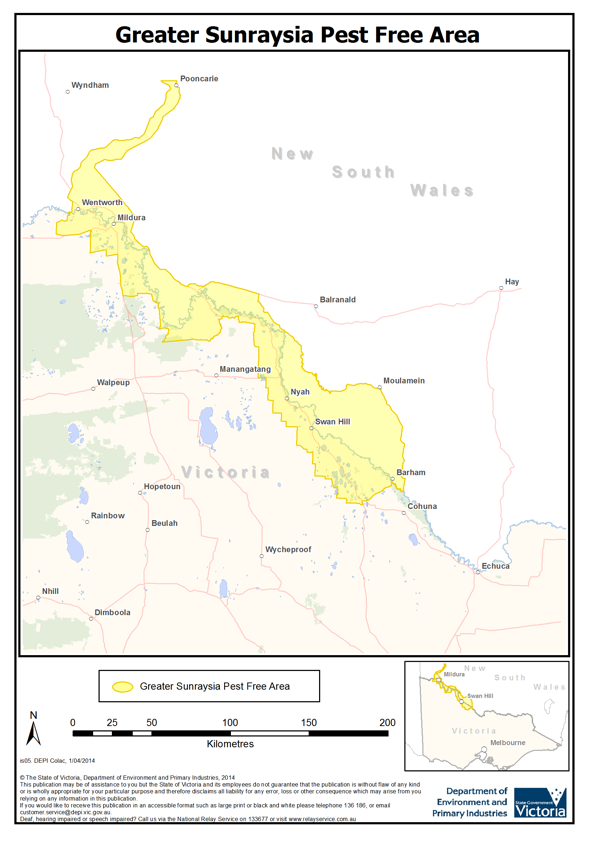
The total area of the GS PFA is approximately 1.7 million hectares encompassing land from both the states of NSW and Victoria as well as six local shires (Figure 1). It is renowned for high value horticultural crops including citrus, table grapes and stone fruit. For management purposes the GS PFA is categorised as four zones (Mildura, Robinvale, Swan Hill and Barham). All zones have mixed horticulture with a total of approximately 8,000 ha of table grapes, 6,800 ha of citrus and 2,500 ha of stone fruit. Mildura and Barham produce mostly citrus; Robinvale produces mostly grapes; and Swan Hill produces mostly stone fruit. In 2016-17 the combined estimated export market value of these crops from this region was $669 to 709 million[[1]](#footnote-1). Other produce commercially grown within the GS PFA include almonds, avocados, herbs, olives, vegetables, dried and wine grapes.

Queensland Fruit Fly (QFF) *Bactrocera tryoni* is a destructive horticultural pest as it disrupts trade and timely access to international and domestic markets, increasing on-farm management costs and market access costs to horticultural industries and producers. Impacts include, but are not limited to, domestic consumer reticence to local fruit, increased cold storage and transport costs due to in‑transit cold treatment and fumigation, increased cost of compliance to market protocols and significantly reduced market access opportunities.

An increasing number of QFF incursions and outbreaks within the GS PFA and a lack of funding necessitated the voluntary suspension of the GS PFA by the Victorian and NSW Governments in April 2014. The loss of PFA status has had a significant impact on producers who must now use pre-harvest chemical treatments and/ or bilaterally approved emergency post-harvest cold treatments for national and international market access.

In 2014, the Victorian Minister of Agriculture devolved the responsibility for QFF suppression and eradication to the regions. With grower’s support, the Greater Sunraysia Pest Free Area Industry Development Committee (GS PFA IDC) was established under the *Greater Sunraysia Pest Free Area Industry Development Order 2014* and the *Agricultural Industry Development Act (1990)*. Devolving the power from state government to the IDC provided grower representatives the power to make decisions on how QFF would be managed. Under this arrangement the actions delivered were better informed and more relevant to local interests. The IDC was operational for a term of four years, however, ceased operations in December 2018 as there was not sufficient support from industry to continue for a second term under this arrangement.

This RAP recognises and builds on works and achievements of the IDC funded by industry charges collected from citrus, stone fruit and table grape producers in the Greater Sunraysia production area together with Victorian Government funds.

Figure 1. Greater Sunraysia Pest Free Area in Victoria and NSW.

# Area Wide Management for Queensland Fruit Fly

The key outcome of implementing the Regional Action Plan (RAP) 2019-20 is to manage the pest to reduce its impact on productivity and in-turn enabling growers to produce a marketable product (domestic and overseas). The RAP adopts an Area Wide Management (AWM) approach proposing a range of activities to be delivered in cooperation with multiple stakeholders to reduce the total QFF population. Local area management is intended to keep the pest population below economic thresholds (Dhillon et. al., 2005[[2]](#footnote-2)). By reducing the QFF population across the community it is expected that commercial properties are more likely to be able to control the impacts caused by QFF on-farm. However, it is emphasised that AWM may take some time to be fully realised - beyond the timeframe of an annual funding cycle.

Previous strategic plans and past government investment has concentrated on education and control in urban areas and rural residential properties. These areas have been the focus of AWM efforts as they have developed into QFF oases, with many different types of fruit trees and vegetable gardens with produce maturing throughout the year providing ongoing hosts for QFF to breed and survive. This is especially evident during the winter months, where both urban and irrigation areas provide a micro climate of warm and moist conditions, with an abundance of continual protein sources as opposed to the natural dryland climatic zone experienced across the GS PFA, where establishment and colonisation is unlikely (Dominiak, Mavi and Nicol, 2006[[3]](#footnote-3)). Good progress has been made in urban areas with residents more aware and informed on the importance of host tree hygiene, and control methods for QFF and the adverse impact of the pest on the wider horticultural region and local economy. However, greater effort is required to generate the urgency and translate this awareness into action within the urban and rural residential settings. While it may affect their liveability it generally does not affect their livelihood, unlike commercial growers.

Commercial growers generally have a single crop type and are equipped to manage QFF populations on their property. Commercial growers are experienced and understand their obligations in undertaking pest management and control activities on their properties whilst abiding with market protocols and maximum residue limit requirements for their production. Gradually commercial growers within the GS PFA are adopting on-farm QFF monitoring and control activities for QFF within existing Integrated Pest Management strategies and cold disinfestation treatments as part of their production and market access practices. However, there are still some growers who have not fully committed to best management practice for QFF control with only half-measures implemented. Organic growers are particularly challenged in their plight against QFF with limited control options. Given the flies ability to migrate between properties successful control relies on maintaining low pest pressures across the region throughout the year.

Populations appear to be increasing in rural areas and greater efforts are required to ensure all growers are adequately prepared.

##### The objectives of this RAP are to:

1. reduce QFF populations in commercial and urban areas
2. educate and empower all sectors of the community so they are self-sufficient in knowing when and how to control QFF.
3. enhance regulatory and compliance mechanisms to ensure everyone is playing their part.
4. build and maintain stakeholder confidence in the AWM program.
5. develop a financially sustainable and effective organisation to support on-going QFF management.

Table 1 below describes the program logic in how these objectives will be achieved by undertaking key activities and utilising available resources and collaborative arrangements to successfully deliver the program and maintain stakeholder confidence.

The key components (activities) of the program are:

1. Innovation and integration of new technologies.
2. Communication and education of commercial growers and the general public.
3. Control program: for example, ‘Hot Spot’ identification and investigation; dynamic trapping; and host tree removal program.
4. Compliance: Targeted compliance and surveillance activities – urban and rural settings.
5. Evaluating program success.
6. Organisational resource and capability.

These activities are further described in Table 2. Some activities will deliver against multiple objectives:

* Objectives 1 and 2 will be delivered through activities 1-4.
* Objective 3 will be delivered through activity 4.
* Objective 4 will be delivered through activity 5.
* Objective 5 will be delivered through activity 6.

This plan is complemented by a communications strategy providing greater detail on the target audiences, key messaging, suitable tools to deliver these messages as well as branding and strategies for promotion.

1. Reduced QFF infestations in rural and non-rural areas.
2. Community is self-sufficient at knowing when and how to control QFF.
3. Community expectation of compliance with the program is met and everyone is playing their part.
4. Build and maintain stakeholder confidence in AWM program by achieving results.
5. Develop a financially sustainable and effective organisation to support on-going QFF management.

**Key Outcome:**

**Objectives:**

**Key Operational Activities (KASA):**

Creating **awareness**; providing the necessary **knowledge** to develop **skills**; creating a positive attitude and realistic **aspiration**.

**2. Communication and Education Program**

* Community awareness and education – control and hygiene.
* Grower experience – shared knowledge to integrate QFF into existing IPM strategies.
* Shared national and international status and experience.
* Signage within and surrounding the GS PFA.

**4. Regulation and Compliance Program**

* Enforcement of biosecurity protocols and local laws.
* Clarifying trading partner requirements for QFF.
* Contribute to the review of current instruments for market access.
* Compliance controls for neglected / abandoned commercial properties.
* Land-use planning to avoid QFF hosts.

**1. Innovation and Integration Program**

* Facilitating in-field testing and development of:
* new control and management strategies; and
* new surveillance and diagnostic tools and systems.
* Understanding QFF ecology and behaviour on local farms.

**Growers able to produce QFF-clean and marketable fruit and vegetables**

**5. Evaluating Program Success:**

GS PFA surveillance grid – QFF numbers

Awareness and adoption of controls

**6. Organisational Resources and Capacity:**

Engaging stakeholders in developing and delivering program – grower driven utilising expert knowledge

Maximising investment opportunity through partnerships and collaborations with existing programs and alternative funding model/stream

Stakeholder confidence

Maintain organisational resources and staff capacity – meeting legal requirement and reporting obligations

**Table 1. QFF Management in GS PFA - Program Logic**

**3. Control Program**

* Hot spots – identification and inspection with supplementary trapping.
* Host-tree removal program in urban and rural residential areas.
* Self-sustaining area-wide trapping program.
* Trial of bait spray & alternative controls

Farm impact /crop losses

Organisational obligations met

# Table 2: Key activities

|  |  |  |  |
| --- | --- | --- | --- |
| **Key Activity** | **Rationale** | **Scope** | **Actions** |
| 1. **Innovation and Integration** | By facilitating the development of new technologies and management practices through on-ground testing it will bring QFF expertise into the region and improve the localised application and learning. | * Facilitate connections between research organisations; innovators and growers. * Assist with on-farm investigations for research and development trials and providing a feedback loop between parties. * Assisting with investigations on-ground to improve the adaptive capacity of the technologies and practices under local conditions. | * 1. Testing new surveillance and diagnostic tools and systems to assist with AWM. |
| * 1. Testing of new technologies and practices for on-farm control. |
| * 1. Undertake investigations to better understand local agro-ecology that supports QFF populations and determines behaviour. |
| * 1. Identify local QFF knowledge gaps and assist with developing funding applications to address local research priorities and cross-sector benefits. |
| * 1. Contribute to scientific forums and tours to compare and provide regional QFF context and build-on local experience. |
| * 1. Review existing Sterile Insect Technology control trials in local environment. |

|  |  |  |  |
| --- | --- | --- | --- |
| **Key Activity** | **Rationale** | **Scope** | **Actions** |
| 1. **Communication and education** | Continued effort is required to ensure all sectors of the community are aware of when and how to control QFF. Understanding what motivates landowners will assist with deploying relevant strategies that are more likely to result in the adoption of control measures.  More detailed analysis and information about the target audience and key messaging using traditional and social media is available in the “GS PFA Communication Strategy”. | * Improving the social learning by encouraging growers to share and learn from each other and bringing knowledge owners and experts from other regions – including growers; researchers; consultants etc. * Encouraging community members (including growers) to remove unwanted/ excess fruit trees from house yards as a permanent solution and support for industry. * Assisting the community to better understanding the commitment required for successful control and relative costs. * Investigate motivations for change for all sectors of the community. | * 1. Maintain and implement the GS PFA Communication Strategy. |
| * 1. Develop Best Management Practice guidelines and training modules to integrate with existing Integrated Pest Management (IPM) systems. |
| * 1. Maintain social media platforms (Facebook and website) to communicate regularly with the broader community. |
| * 1. Convene workshops/ presentations/ conferences/ field days and market stalls targeting key stakeholders. |
| * 1. Produce a QFF quarterly newsletter for growers. |
| * 1. Design, print and distribute information packages on QFF management for home-gardeners. |
| * 1. Produce social media products and traditional media publications to promote seasonal hygiene and control activities. |
| * 1. Promote tree removal services for urban and rural residential properties. |
| * 1. Review and promote the “Property Identification Code”(PIC) project availability to growers. |
| * 1. Develop linkages with local schools and assist with delivering lessons. |
| * 1. Review signage within and surrounding the GS PFA. |

|  |  |  |  |
| --- | --- | --- | --- |
| **Key Activity** | **Rationale** | **Scope** | **Actions** |
| 1. **Control Program** | By controlling QFF - directly and indirectly – the population will decrease over time and therefore reduce the population pressure on, and surrounding, commercial properties. Control encompasses both direct killing of the fly (spraying and trapping) as well as changing the environment so that it is less conducive for flies to reproduce and spread, e.g. tree removal. There are not enough funds to implement control on all properties, so the program focuses on the areas where there are the highest infestations – known as hot spots. | * Efforts are focussed in areas with the highest risk/ infestations – hot spots in urban; peri-urban; rural residential and commercial properties. * Investigations are undertaken by GS PFA staff in order to identify causal infestations, as well as educate and empower landowners to employ their own control strategies. * Dynamic trapping used to assist with educating landowners removing the need for an on-going service. * Host trees will be removed to reduce the ability of the QFF to complete its lifecycle. * Investigate sustainable mass trapping programs. * Spray trials and trials of other technologies that will assist with control in urban and rural residential areas. | * 1. Investigate techniques and tools to improve: the identification of highest risk areas; and the efficiency of field investigations. |
| * 1. Undertake daily field inspections to investigate and identify source of infestation and engage with landowners – urban and rural areas. |
| * 1. Deploy traps around known and suspect sources of infestation. |
| * 1. Procure agronomic advice from QFF technical specialist to advise field officers and growers. |
| * 1. Encourage the removal of perennial host plants in non-commercial situations (Private and Public land). |
| * 1. Map non-commercial host, perennial plant locations on private and public land to identify target areas for tree removal. |
| * 1. Update list of host species most susceptible to QFF infestation for tree removal prioritisation. |
| * 1. Trials of alternative control and application methods under local conditions in urban and rural residential areas. |
| * 1. Mass trapping in selected areas with demonstrated sustainability – includes trial implementation and evaluation as well as targeted programs around hotspots. |

|  |  |  |  |
| --- | --- | --- | --- |
| **Key Activity** | **Rationale** | **Scope** | **Actions** |
| 1. **Regulation and Compliance program** | While compliance is not the first option for getting a response – it has been successful avenue particularly for ‘disinterested’ landholders identified through field investigations/ public reports. The GS PFA staff are not qualified enforcement officers, so we work closely with the appropriate compliance authorities to supplement the awareness and education program. In escalating the issue, it provides a clear message to landowners that they are responsible to take action. Refinement of the QFF protocols and planning tools within local context will assist with better adoption of control measures by landholders. | * Promoting and facilitating the implementation of compliance measures under Local Laws and State Biosecurity Act. * Promoting and facilitating the implementation of QFF measures for market requirements. * Co-ordinating grower feedback into market access protocols and instruments for best management and adoption. * Contribute to land-use and local planning guidelines to avoid increasing future QFF pressure. | * 1. Identifying compliance issues for referral to relevant Local or State Government agencies. |
| * 1. Promoting adoption of consistent and realistic council By-laws regarding the control of QFF across the region. |
| * 1. Contributing to the development and refinement of protocols for QFF management for commercial industries. |
| * 1. Reviewing local planning strategies to consider planting non-host varieties on roadside and other shared community areas. |

|  |  |  |  |
| --- | --- | --- | --- |
| **Key Activity** | **Rationale** | **Scope** | **Actions** |
| 1. **Evaluating program success:** | Given the fly’s ability to adapt to local conditions it may take successive seasons before the success of program fully materialises. Multiple measures are required to demonstrate incremental success of program delivery as well as resultant changes in population pressures and marketability of fruit. | * Surveillance grid maintained by AV across the GS PFA urban and commercial areas – capturing and reporting weekly fly catch data\*. * Farm impact and estimates of crop losses. * Awareness and adoption of control measures. * Organisational obligations are met; * Establish a longer-term (3 to 5 year) delivery model – including adequate funding from multiple sources to support continued program activities. | * 1. Review of current and historic fly catch data from AV surveillance grid to determine correlation between program activities and QFF population. |
| * 1. Consult with packing sheds to determine effective measure of seasonal crop losses. |
| * 1. Undertake evaluation of various program activities to determine extent and effectiveness of delivery. |
| * 1. Monitor and track stakeholder consultation and engagement together with their increased knowledge and understanding and confidence in the program. |
| * 1. Develop a long-term strategy for continued QFF management to support industry |

\*The NSW and Victorian State Governments continue responsibility for surveillance and compliance programs.

|  |  |  |  |
| --- | --- | --- | --- |
| **Key Activity** | **Rationale** | **Scope** | **Actions** |
| 1. **Organisational resources and capacity.** | By implementing efficient and effective business systems and governance processes to deliver high quality services stakeholders will be confident that resources have been spent appropriately. This in turn will generate confidence in future investment for ongoing QFF management to support industries. | * Engaging key stakeholders i.e. growers, to develop and deliver the program as well as build-on existing knowledge – QFF governance group. * Building strategic relationships with State and Federal Government to implement legislative and policy change that supports the program outcomes and foster information flow. * Maximise investment opportunity and returns by developing strong partnerships and collaborations with existing QFF programs and exploit alternative funding sources. * Revisiting old and investigating new avenues to bring resources into the region. * Maintain organisational resources and capacity to meet legal requirements and reporting obligations. | * 1. Provide effective two-way information flow between industry groups and program delivery through good governance. |
| * 1. Provide adequate and job specific training opportunities to improve staff capability. |
| * 1. Maintain financial management and reporting framework to meet investor requirements. |
| * 1. Maintain adequate administration support to facilitate project delivery. |
| * 1. Make relevant applications to traditional and new funding sources. |
| * 1. Seek collaborative and in-kind support agreements with regional, State or National partners. |
| * 1. Build a risk management mind-set into project planning and delivery. |

# Key stakeholders

Working collaboratively with key stakeholders will assist with coordinating QFF management efforts across the region and avoid duplication of effort, thereby maximise the effectiveness and efficiency of the program.

For the purposes of this Regional Action Plan the relevant key stakeholders and their interest in the program are described in the following table.

|  |
| --- |
| 1. General Community |
| All residents within the Greater Sunraysia Pest Free Area.  This includes:   * community advocates (service clubs, schools) * land owners with home gardens (refer to residents with fruit trees) * commercial as well as small-scale producers (growers, roadside stalls, farmers markets, nurseries) * land managers (real estate agents, public housing, public land managers, local government) * packing houses; * distributors of commercial fruit and vegetables (box companies, transporters, fruit processors) * service providers (chemical retailers, consultants, agronomists, nurseries) * visitors (itinerant pickers, tourists).   *The purpose of having an all-encompassing target audience reflects the joint approach that our community needs in order to manage fruit fly. It is not a responsibility that lies predominantly with any one group. Therefore, the majority of effort should be invested in this broad-based group.* |
| 1. Residents with Fruit Trees |
| Rural and urban house blocks with fruit trees.  *Many residents across Sunraysia have one or a number of fruit trees in their back yards/house blocks. Not everyone is aware of the biosecurity risk and responsibilities required to manage for QFF. The high number of fruit trees in residential areas (rural and urban) has the potential to significantly undermine any AWM program. Special consideration is given to target rental properties or public housing where management of the property is done via an agent or land manager.* |
| 1. INVESTORS / COLLABORATORS |
| Federal: Commonwealth Government; Member for Mallee; National Fruit Fly Council  *Advocates for the regional program;*  *Identifies future investment and collaborative opportunities.* |
| State: Regional Victoria, Department of Jobs Precincts and Regions (DJPR)  *DJPR is a key investor who reports directly to the Minister for Agriculture regarding activities undertaken and progress made toward QFF in the Greater Sunraysia pest free area.*  *Biosecurity Team assist with landowner education and compliance.*  *Agriculture Victoria is the lead agency for QFF research in Victoria.*  *Monitoring of the surveillance grid in the GS PFA is operated by DJPR. The surveillance data is used to direct operational activities.* |
| Local government: Mildura Rural City Council, Swan Hill Rural City Council, Gannawarra Shire Council Murray River Group of Councils Victoria.  (all VIC).  River Murray Council (previously Murray Shire Council and Wakool Shire Council) Balranald Shire and Wentworth Shire Council (NSW).  *Support the regional program, assist in program activities.*  *Co-ordinated approach to public education and awareness with local councils.*  *Enforcement of local by-laws and State government legislative requirements for landowners in urban and rural areas respectively.*  *Local government is seen by the general public as the most trusted source of information by the general public. Local councils can provide an avenue to connect with landholders (urban + growers) and promote the program within each municipality.* |
| NSW: NSW Department of Primary Industries (DPI)  *Assists with landowner education and compliance.*  *Seeking future investment opportunities to support activities in NSW.* |
| GROWER INDUSTRIES |
| Citrus, table grape, stone fruit, wine grapes, dried fruit, seasonal vegetables, and organic growers etc.  *As large industries growing crops side-by-side across the Sunraysia region, the actions of one group can have significant impact on the ability of another to produce marketable fruit and vegetables. While this is an important issue for the fresh industries, value-adding industries are not immune to QFF effects on fruit and vegetable quality when the seasons are bad. The objective is to convince all industry groups to support the QFF management approach and work together as part of the regional call to action.* |
| SCHOOL students |
| Primary and secondary school students across Sunraysia.  *Education campaigns within primary and secondary schools across the region could help increase awareness and understanding of the fruit fly issue, with the potential that students could help educate their parents about appropriate fruit fly management.* |

# Indicators of Success

|  |  |
| --- | --- |
|  | **Key Performance Indicators** |
| **GS PFA Surveillance Grid** | Surveillance data demonstrates a reduction in pest pressure in areas where the AWM approach has been applied. |
| **Farm impact and crop losses** | Seasonal crop loss caused by QFF infestation is minimised. |
| **Awareness and adoption of controls** | Number of trial sites established in the region. |
| New knowledge generated about local population of QFF and behavioural response |
| Uptake of new technology and/ or practices. |
| Stakeholder feedback from communication activities is positive, demonstrates knowledge and adoption of control measures, and reduced waste caused by QFF. |
| Improved identification of high-risk areas for timely field investigation. |
| Evaluate the number of compliance referrals and response to control notices. |
| Evaluate number and type of enquiry over time to identify information gaps. |
| Increased number of perennial host plants removed from public and private land. |
| Number of QFF experts – including growers, researchers, consultants etc. - visiting the region and conveying their knowledge on management of QFF to growers and industry. |
| **Meeting organisational obligations** | Staff capabilities meet job requirements. |
| At least four governance committee meetings convened per year. |
| Contractual financial and status reports are accurate and completed on-time. |
| Legal and regulatory compliance obligations met. |
| **Stakeholder confidence** | GS PFA is in a sound financial position. |
| Growers and general community are aware of, and support, the QFF AWM program activities. |
| Strong working relationships are established between technical experts and stakeholders. |
| Stakeholders are actively engaged in the program planning and delivery. |
| Interstate protocols and guidelines are refined. |
|  |

1. Agriculture Victoria 2018. ‘Report on proposal for *Greater Sunraysia Pest Free Area Industry Development Order 2018’.* [↑](#footnote-ref-1)
2. Dhillon, M.K., Ram Singh, Naresh, J.S. and Sharma, H.C. 2005. The melon fruit fly, *Bactrocera cucubitae*: A review of its biology and management. The Journal of Insect Science. 5:40-55. [↑](#footnote-ref-2)
3. Dominiak, B.C., Mavi, H.S. and Nicol, H.I. 2006. Effect of town microclimate on the Queensland fruit fly *Bactrocera tryoni*. Australian Journal of Experimental Agriculture. 46: 1239 – 1249. [↑](#footnote-ref-3)