

# BUILDING RESILIENCE INTO NORTHLAND'S ORCHARDS

*A resilient orchard system is one that allows an orchardist to ready their business to absorb the impact of unexpected adverse weather.*

Floods, high rainfall, gales, erosion, landslides and droughts are all features of adverse weather that might hit Northland. Why is it that some orchardists come through these events better or worse than others? There is the 'physical aspect' – some orchards are just more prone to some events such as flooding. There is also the 'manager aspect' – the resilience of a farmer to adverse weather is highly linked to their awareness, planning and actions undertaken.

This info sheet summarises how Northland orchardists perceived the risks of weather events and what they did about them. It is most relevant to avocado orchards but has useful tips for other orchardists.

## KEY MESSAGES

- Adverse weather events can hurt you, your family, your trees and vines and your orchard business.
- Planning will not only soften the physical damage on orchard but also the impact on your family and finances.
- You are not alone. Other orchardists and farmers are facing or have faced similar issues. Talking to others helps you and them.
- Remember that events may not happen in isolation – you may have to deal with several serious problems at one time. (e.g. floods, wind damage, low fruit prices and reduction of next years crop).



## CLIMATE SWINGS

Due to its long and narrow geography, Northland is a region prone to the impacts of adverse weather events, particularly ex-tropical cyclones and severe local storms like tornados. It is not uncommon to hear about extreme rain, wind and flooding events in Northland. Cyclones such as Bola, Giselle, Drena and Fergus have also left their impact as well as sizable storms in 2007, and since, which have caused considerable localised damage.

Parts of Northland have also had exposure to extreme dry spells. The recent 2009/10 drought stands out for Northlanders for its harsh impact on Northland farms. Long time Northland farmers recall past droughts which will no doubt occur again.

*“The ability of orchardists to change the impact level of adverse weather events to orchards lay in their ability to understand the dynamic socio, economic and physical limitations and opportunities that their orchards presented – in short, their ability to evaluate the risk posed and put in place adaption strategies and practices to address these.”*

*Tracy Payne, AgResearch, 2009*

## THE ACTIONS OF PRO-ACTIVE ORCHARDISTS

### Equip to be orchard ready

Consider what it is you will need in an emergency. Do you have enough supplies and equipment on hand to deal with crop on the ground, blocked drains, fallen trees, roofs blown off, loss of access ways etc.

Consider what is needed for the longer term. Is shelter adequate? Are trees in the wrong place. Do I have

sufficient irrigation water in a drought? Evaluate the need for equipment such as backup pumps or generators.

Consider what is needed in the shorter term. Do you have trees that are likely to fall down? Drains that need regular cleaning to keep clear? Loose iron on the shed that needs nailing down? It is much easier to do these jobs before they create an issue in the middle of a storm.

### Tree health and height assessment and reassessment is vital

Tree health and height should be assessed regularly and consideration given to the risk of phytothera infection. Wind throw should be considered in the short and long term, and in relation to long term weather forecasting for the local area.

### Act early and reassess regularly

With rough weather on the horizon, act in good time. For example: if at risk of flooding, check drains to ensure culverts and drains are unblocked.

If at risk of severe wind, consider reducing the size or removing trees which are at risk.

### Follow the weather

Short and long term forecasts are becoming increasingly more accurate. Orchardist that followed local and national weather forecasts were able to better evaluate how weather would impact on orchard or in their catchment.

### Equip for personal home and safety readiness

Your orchard is your family's home. Make sure you have an emergency plan and a stock of supplies in case an event isolates you without phone, power, water, food or access off the property.



## KEY ACTIONS DISCUSSED BY AVOCADO ORCHARDISTS TO PREPARE FOR OR DEAL WITH STORM DAMAGE:

	STRATEGIC	TACTICAL
CROP AND TREE DAMAGE	Reduce avocado tree height.	Decide if there is a need to remove fallen fruit from under trees.
	Pruning maintenance to allow more space in the middle of tree.	
	Try to create a strategy whereby fruit were ready to pick earlier.	
STRUCTURES	Decide to stop growing crops in particular areas.	Clear laneways.
	Reduce avocado tree height.	Re-balanced/stabilise/stake trees; OR Wait and see what the trees will do – let trees settle.
	Investment in plant structures.	Spray for Phytothera – usually trunk spraying.
	Trunk spraying for Phytothera incorporated in regular crop spraying program.	Use a regular copper application or other fungicide prior to storm.
	Use rootstocks that have some Phytothera resistance.	Cut away parts of trees with Phytothera infection.
SHELTER	Plant shelter belt strategically to block prevailing wind.	Clean up fallen trees and replant.
	Increase shelterbelt height – don't trim.	
	Consider using different shelter species.	
SOIL DAMAGE	Drainage built into orchard design or added later.	Drainage cleared and maintained regularly.
	On sloping orchards use simple divers to divert main water away from trees.	Don't use machinery and vehicles on heavily saturated soils.

### Use local resources and services available to you

Find out what resources are available in your local community.

Rural Support Trust, Regional Council, District Council, and industry groups play key roles in supporting the rural community in times of emergency.

Know how to contact them. Have a list of emergency contacts. You don't want to be searching for numbers in an emergency. Neighbours, power company, phone company, farm contractors, farm workers, transport companies, packhouses, consultants, industry representatives etc would be a good start to your list.

*"I went around and saw a lot of growers and you could see it in their eyes, it was almost like a family member had died. They were physically breaking down in the orchard..."*

*"After a meeting in Barge Park all the growers got together for a few beers. It was then that the growers started to realise that they were not alone, that everyone was involved and I think that helped them personally."*

*A Northland Orchardist*



## TOP 7 PRINCIPLES TO DEVELOPING RESILIENT ORCHARDS IN NORTHLAND

### 1. Physical limitations are unique to every orchard and region

Understand the physical aspects of the orchard and local area that may be at risk to adverse weather events.

### 2. Early risk assessment and decision making is vital

Assess potential weaknesses of your orchard business to a sudden or extended adverse event and address any issues or actions arising.

### 3. Contingency plan for factors that cannot be directly controlled

For example key factors may be the national economic climate or market value of produce.

### 4. Be aware of fast and slow weather cycles and their potential risks

Storms are quick events, they hit, do damage then leave. Droughts sneak up slowly and last a longer time often doing substantial damage before it is realised.

### 5. Talk to other orchardists.

You are not alone. Other orchardists are often in the same situation or have been there before. Link into local networks in your horticultural and local community that are there to help/support.

### 6. Consider economic resilience

Consider if the orchard income is diverse enough to withstand pressures beyond reasonable seasonal or annual fluctuations. Adverse weather events can add sudden and unexpected costs to the budget. Link this with low product prices and this can have serious financial implications.

### 7. Plan for the unexpected

Some adverse weather events may occur very rarely with impact in your local area. This may mean when a large unexpected event hits, it has very high impact on your orchard. Never assume it won't happen.

*"Generally weather events are never as bad as you think they are going to be but those last two (March and July 2007) were a hundred times worse than I expected."*

*A Northland Orchardist*

## CONCLUSION

- The more resilient you are to adverse weather events, the more secure your family and orchard business will be.
- Identify the risks, assess the impact, and decide on an action. Become more resilient!
- Planning is essential for long term orchard resilience.



Photo courtesy of Northland Regional Council.

### **Some key contacts include:**

Police, fire or ambulance **111**

Northland Rural Support Trust **0800 787 254**

Northland Regional Council **0800 002 004**

Avocado Growers Association:

Mike Eagles **09 434 7271**

Roger Barber **09 435 0785**

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