



Working with nature to manage your stream

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If you have any questions about this information sheet please contact Auckland Council on 09 301 0101

A stream in a property can be a real asset, which if managed properly can add a lot to your garden, making it more appealing for you and native wildlife alike.

Proper stream management can also help manage flood risk and reduce erosion, both important concerns for many streamside residents. It is also the responsibility of the landowner to make sure that the stream isn't blocked and does not cause problems for neighbours.

The best way to manage a stream is to use nature to do the work for you. The right selection of plants, combined with the careful placement of rocks and logs, can often achieve the same result as more expensive engineered solutions such as concrete channels or culverts, and do so in a more environmentally friendly way.

This guide will give you some ideas about how best to manage your urban stream to reduce flood risk and erosion, enhance your home's appeal, and bring nature into your garden all at the same time.

WELL MANAGED URBAN STREAMS

AVOID CREATING UNNECESSARY HARD STRUCTURES

Hard surfaces around streams, like asphalt or concrete, create more stormwater run off which carries pollution directly into the stream, ultimately ending up in the sea. Also flows coming out of a concrete channel are unnaturally high, which causes damage to wildlife habitat and creates erosion problems downstream.

KEEP IT COOL, PROMOTE SHADE

Planting the right variety of native plants around a stream creates shading, enhancing stream habitat for wildlife.

SOAK IT UP

Soil and native plants are great for soaking up and holding back rainfall. This water seeps into the soil, contributes to groundwater, and sustains streams during dry spells. This decreases the volume of surface water, thereby reducing flood risk and pollution.



LOCATION, LOCATION, LOCATION

The mix of stream and native plantings makes a garden ideal for birds to raise their young as they seek out best combination of shelter and food. At the same time, well-managed natural areas on a property make a site more desirable for residents, which is reflected in higher property values.

ROCK AND ROLL

A few well placed rocks or logs can make a big difference to the health of a stream, as they prevent erosion by slowing down streamflow, help oxygenate the water, and create habitat, all of which are good things for aquatic animals.

HELPING HANDS

Some work to improve a stream may require more than advice from a pamphlet and require more than a weekend's work. Severe erosion may require engineering works that need consenting. If you think that you may need such help Auckland Council is a good place to start the process as our team may be able to provide advice and point you in the right direction.

KEEPING CHILDREN SAFE

Some parents worry about children living next to streams. Educating your children is the best way to reduce this risk. If fencing is preferred, it is best to erect fences outside of the floodplain area, and build fences parallel to the flow of the stream. Fencing off the stream with a wire fence is better than a solid barrier - timber fences or brick walls can obstruct the flow of water and create a flooding risk.

BE A TIDY KIWI

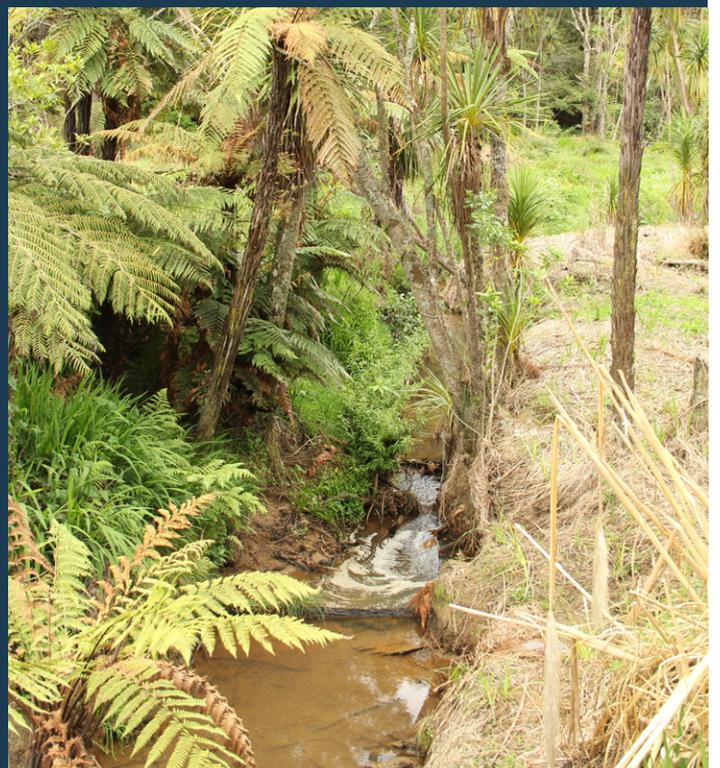
Keep the stream free from obstructions such as garden waste and fallen trees, as these create flood risks and may prevent wildlife from swimming upstream. Remember you are legally liable if this obstruction causes a problem on your neighbour's land. Litter can also pollute streams.

HOLDING IT TOGETHER

Careful selection of native plants can make a big difference to the stability of stream banks as their roots hold the soil together and plant cover dissipates rainfall energy. They also improve soakage of water into the ground, reducing surface water flows, which mitigates flood and erosion risks. Less permeable surfaces such as retaining walls concentrate flows, making them more erosive and increasing flow velocities.

FROM YOUR GARDEN TO THE SEA

Remember, if it goes in the stream it flows to the sea - so restrict the use of chemicals such as detergents, fertilisers, herbicides, pesticides and insecticides to areas of the garden away from the stream. Although the plants are able to filter some of the chemicals, there will be some that will enter the stream and degrade the ecosystem.



NEW NEIGHBOURS

A well planted and managed stream can be a haven for wildlife and bring a wide variety of life into your garden, from iconic native New Zealand birds such as the tui or the kereru to the tiniest fresh water shrimps and even smaller aquatic creatures.

Regardless of their size, they all have an important role to play in your stream's ecosystem, a cycle that connects your garden with our precious coastal environment.



FINDING OUT MORE INFORMATION

Auckland Council's Caring for Urban Streams range of guides is a good source of information if you want to find out more about managing your stream.

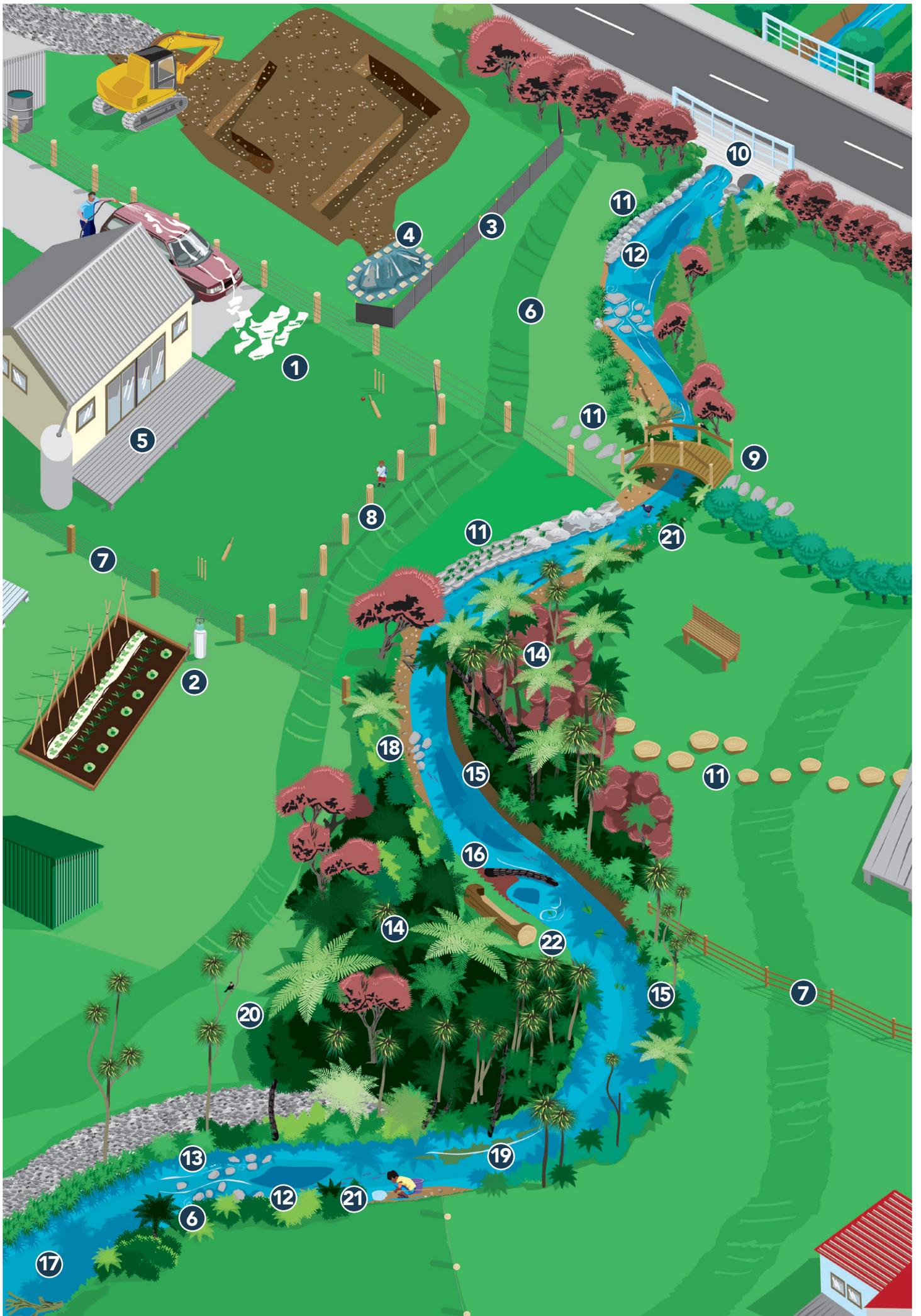
They cover a range of topics, depending on what your priorities are.

1. Flood risk
2. Controlling erosion
3. Improving water quality
4. Planting
5. Increasing biodiversity
6. Enhancing the aquatic environment

There is also a larger document, Caring for Urban Streams which provides a more technical and detailed background to improving Auckland's streams. To get an overall understanding of the issues related to stream management it is recommended that people read through the complete set of guides.

To access these documents please visit www.aucklandcouncil.govt.nz/stormwater





ACTIONS NEEDED TO KEEP A STREAM HEALTHY AND SAFE

1. Wash water flowing onto lawn
2. Garden chemicals applied far from stream
3. Silt fence in place around construction
4. Covered stock pile
5. Building not in floodplain
6. Natural floodplain left alone
7. Fences in floodplain let water through
8. Use fences to keep kids safe
9. Bridge rather than culvert allows a more natural flow
10. No barriers to fish – culverts gently sloping and not perched
11. Use soft engineering and natural materials

SIGNS OF A HEALTHY STREAM

12. Deeper water and pools
13. Natural features such as meanders and stony / rocky sections
14. Native plants
15. Stream shaded by trees and shrubs
16. Logs, sticks and leaves along stream bed
17. Cool, clear, flowing and odourless water
18. Stones and plants not covered in silt
19. Algae and water plant growth similar between winter and summer
20. Natural habitat for birds and other life
21. Many different fish, water insects and other aquatic animals
22. Litter free and attractive environment





ACTIONS THAT HARM STREAMS AND ARE UNSAFE

1. Wash water flowing into stream
2. Garden chemicals applied close to stream
3. Exposed earth allowed to wash into streams
4. Uncovered stockpile
5. Buildings in flood plain
6. Earth works in flood plain
7. Fences in flood plain don't let water through
8. Unfenced streams can be dangerous places for unsupervised children
9. Structures in the stream affect flows
10. Barriers to fish - culverts steep and perched
11. Use of hard engineering and materials

SIGNS OF AN UNHEALTHY STREAM

12. Few deep pools
13. Few natural features such as meanders and stony / rocky sections
14. Weed plants, blocking flow and harming native plants
15. Stream banks unplanted and providing no shade
16. Plant debris piling up and causing flooding
17. Warm stagnant water with bad odours
18. Stones and plants covered in silt
19. Excessive algae and water plant growths in summer
20. Stream banks eroding and undermining the ground and structures
21. A wide channel with shallow flows most of the time
22. Rubbish and dumped material causing blockages

