



Welcome to this edition of the Styx Newsletter

It is exciting to see that only four years into a forty year project so many of the early initiatives are already starting to have an effect on aspects within the Styx catchment. Additionally, with so much happening at the moment in the Styx, it has been difficult to select what articles to include in this edition. It is hoped you will find the stories finally selected encouraging and enjoyable reading.

The Case of the Disappearing Stream

In recent years residents near the upper reaches of the Kaputone Stream have noticed that the status of water in the stream has been reducing and in some cases seems to have disappeared altogether.

In February 2005 those living alongside the Kaputone Stream met with representatives of the Shirley Papanui Board, Environment Canterbury, Christchurch City Council and members of both the community water status monitoring group and Styx Living Laboratory Trust to discuss the issue.



Dry stream bed, upper reaches of Kaputone Stream.

Although no single factor could be identified as being responsible for the decrease it was suggested that the significant loss in streamflow may be due to any, or a combination, of the following factors:

- lower level of rainfall, or higher evaporation in recent years affecting the recharge of the Kaputone
- variation in intra annual rainfall distribution
- long periods of low flow in the Waimakariri River
- lowering groundwater levels across the area, caused by something else, and coinciding with the construction of Northwood
- the creation of new springs and discharge from the amenity lake within the Northwood subdivision. Both have Environment Canterbury permits from March 2004, and now discharge into the Styx River
- development of land within the upper catchment and also between the catchment and the Waimakariri and Styx Rivers.
- sediment deposition in the channel of the Kaputone Stream

The outcome of the meeting was that a working party was set up to investigate mitigation options and to develop an action plan investigating a range of options along with pros and cons of each and the cost.

significant build-up of sediment in the channel within Englefield Reserve, which could have affected the baseflow in the Kaputone Stream.

The decision was made to remove this sediment and work will commence during spring time. Following the removal of this sediment, the working party will then meet to assess results and to work with the community water status monitoring group reviewing the sites being monitored and the information being collected.

This case clearly illustrates the benefits of having long term community monitoring programmes. Information that is accurately and regularly being recorded by volunteers provides a picture of what is happening in an area and significant changes can be quickly recognised. It may seem pointless to go out once a week and record whether there is wet mud or puddles in the stream, but the value of this information, built up over years, provides a significant and useful tool in the management of the rivers and streams of Christchurch.

The apparent loss of flow in the Kaputone Stream may well turn out to be an illustration of the adage, **“the more we learn, the more we see.”**

In 1996 a longitudinal profile survey of the Kaputone Stream was carried out. It was determined that if another survey could be completed in the immediate future then the two profiles could be compared and changes noted. Consequently during March and April of 2005 a further profile survey was completed. Results showed that indeed there had been a

Volunteers Wanted

This issue highlights some of the benefits gained by the regular monitoring of various factors within the Styx catchment. Currently more volunteers are needed for the **Invertebrate Monitoring Programme**.

What is involved?

Volunteers, working in pairs, are required to monitor a pre-selected site twice a year. This involves approximately 2 hours in the field collecting samples. Samples need to be examined either immediately or at least within the next couple of days.

Sorting and identification is done by microscope in a laboratory setting and details noted. This task can take between 2 – 4 hours. Full training will be given and equipment supplied.

Why Monitor?

Collecting samples of invertebrates within a stream can provide an indication of the health of the stream. If you are interested in becoming part of this programme or would like further information please contact Victor Brown, tel 960-8555

Report from the Styx Living Laboratory Trust

Progress continues at a rapid rate and a number of milestones have recently been achieved.

A temporary office and laboratory has been established at Styx Mill Conservation Reserve. The Trust has purchased a microscope that is being well used by the people involved in the monitoring programmes.

The Water Status and Water Quality community monitoring programmes are going well due to the active efforts of a number of volunteers. Additionally, an invertebrate monitoring programme is currently being initiated and personnel from Golder Associates are developing a monitoring programme specifically for springs within the catchment.

New sections continue to be added to the Styx Website. In addition to segments about restoration projects, monitoring programmes and the Styx Living Laboratory Trust the web now allows nominated persons to directly input monitoring results.

Recently the Canterbury Community Trust provided \$15,000 to be used for a research and monitoring co-ordinator. We are grateful for this financial support along with that given by the Christchurch City Council and Environment Canterbury. Expert advice continues to be provided by staff of Landcare Research and NIWA.

Unfortunately, sufficient and on-going funding has yet to enable the full time employment of a research co-ordinator on a permanent basis. This is a limiting factor to the development and growth of the activities of the Trust.

The Trustees and Board of Management continue to actively support the many activities taking place in the Styx. As Chairperson of the Trustees I would like to thank them, along with a huge number of other volunteers, for their continuing support of the Styx Project.

Lesley Keast
Trustee and Chairperson

Inanga Spawning on the Styx River



Fig.1 The orange marker flags on the far bank indicate the location of inanga eggs.

Inanga, are our most common whitebait species. Most inanga whitebait spend only one spring and summer in our rivers before migrating downstream to spawn in the autumn. Inanga spawn in an interesting



Fig.2 Hundreds of inanga eggs (white dots) amongst grass roots.

way, as it appears they coordinate their spawning behaviour with the spring tides, and deposit their eggs amongst flooded bankside grasses. When the tide recedes, the eggs continue to develop out of the water, hidden amongst the roots of the grasses and rushes. Fish eggs have no shells, and would dry out and die, except for the shading from the vegetation, and moisture from rain and dew. The tiny inanga embryos feed from their egg yolks, but have to absorb oxygen from the air, as we do.

Inanga appear to be quite fussy about where they spawn, but tend to use the same area each year, as long as it remains suitable. A number of environmental agencies have been trying for years to find out where adult whitebait (or inanga) spawn on the Styx River, but to no avail. This is not an easy job though, in fact it makes finding a needle in a haystack appear easy. Inanga eggs are only 1 mm in diameter, and the area to search can be hectares of vegetation.

This year, after two long days searching on hands and knees – success. Good numbers of inanga eggs were discovered upstream of the tide gates, amongst tall grasses (Figs. 1 & 2), and even more eggs were found amongst native rushes on the opposite bank. In the 1980's members of the volunteer group, Zonta International, planted much of this area in natives.

The onset of inanga spawning at this site represents another stage in the naturalisation of the lower river.

When examined using the Styx Living Laboratory microscope, all of the collected eggs were healthy and at the same stage of late development (Fig. 3). It was concluded that they were shed and fertilized in a single spawning event, and were likely to hatch on a spring tide at the end of April.

The area where eggs were found this year had been searched intensively during previous years. Success in locating eggs this season is likely due to a good whitebait run last season, and improved inanga rearing and spawning conditions in the lower river.

Contributed by Mark Taylor

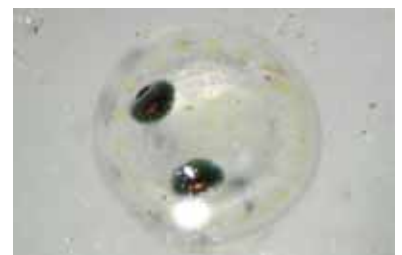


Fig. 3 A well-developed inanga egg from the Styx River.

FAST FACT

Since the 1850's a total of 96 different bird species have been recorded in the Brooklands area. In the last few months there have been sighting of 3 new arrivals: Cape Barren Goose, Northern Giant Petrel and Broad-billed Prion.

WEB SITE

www.thestyx.org.nz

The Styx website is constantly being upgraded and new information added including monitoring results. Why not add this address to your favourites?

A Bird in the Hand...



Kererū, wood pigeon

What do a native pigeon and a buff weka have in common?

Apart from both being native to New Zealand they appear to have very little, as they differ in size, plumage character and mobility. However, if the outcomes of plans currently being developed at Willowbank Wildlife Reserve are achieved, these two species could end up being next door neighbours.

Willowbank is probably best known for its success in breeding kiwi. Currently there are twenty three kiwi in residence with more birds being bred here than at any other facility in New Zealand. It is this success that has led to Willowbank exploring what other native species could also benefit from a similar breeding programme. In an endeavour to restore what was once part of the Canterbury environment the native pigeon and the buff weka have both been selected.

Once abundant on the inland plains of the South Island the buff weka appears to have become locally extinct in a very short period of time some 80 to 100 years ago. Mike Willis, Park Director of Willowbank, believes that this dramatic decrease was likely to have been caused by an avian infection rather than as a result of other factors, such as predation or climate change.

Fortunately in 1905 twelve buff weka were transported to the Chatham Islands. Once there they quickly established themselves and multiplied in number until

today there are approximately 60,000 weka on the islands. Following nearly two years of negotiations with the Department of Conservation Willowbank has recently been granted a permit to capture fourteen of these Chatham Island birds. Once caught the adult birds will be transported to Willowbank where they will form the nucleus of a breeding programme.

Although a protected species, the rapid decline in population numbers of the native pigeon or kereru is a major concern. Since the extinction of the moa, the native pigeon is now the only seed disperser with a bill large enough to pick and swallow large berries. Native trees, such as the karaka, tawa, miro and others depend on this bird for dispersal of their seed. The extinction of this bird would therefore also spell disaster for our native forests.

Willowbank has already begun to acquire native pigeon and currently have three pair in holding aviaries. Construction of a new breeding aviary is high on the priority list but with an estimated cost of \$15,000 help from a fairy godmother may be required. The hatching and rearing of chicks is only part of a successful breeding programme. A management plan, developed for each bird, determines what happens to that bird once it has been raised.

In the case of buff weka, plans are to release the resulting offspring into a large enclosed predator free area at nearby Styx Mill Conservation Reserve. Any offspring of native pigeon will continue to be fed at Willowbank but they will also be free to come and go as they please. It is hoped that they will gradually expand their territory until the characteristic "whoosh" of their wings can again be heard throughout the province.

Mike Willis needs no convincing of the value of the Styx River corridor and the restoration work being undertaken within the Styx catchment. He believes that the importance of river corridors, such as the Styx and the Waimakariri, cannot be over emphasised as they provide access routes and food larders for wildlife, particularly migratory birds. As a result of restoring pockets of native vegetation along these corridors increasing numbers of native birds are being attracted to the area. He cites as an example the rise in the number of bellbirds that have been seen

this year compared to those sighted during the past 20 years.

Implementation of the 40 year Vision for the Styx now involves partnerships at many levels with both private and commercial interests, community and Council working together to maintain and enhance the special character and identity of the area in addition to making it a place of research and learning.

Maybe those travelling to the Chatham Islands to capture fourteen feisty weka will be encouraged in their task if they are reminded that a bird in the hand may ultimately mean more than two in the bush.

Pa Harakeke



Tidying up the flax bushes at the recent field day, 30 April 2005

The purpose of establishing a Pa Harakeke (flax garden) on the west corner of Janet Stewart Reserve was that once established, the flax could be harvested for traditional practices such as weaving.

It appears that not everyone using the site is aware of its significance. Therefore the Burwood Pegasus and the Shirley Papanui Community Boards recently agreed to jointly fund signage to be erected at this site.

The signage will be designed to compliment the area and include details about the varieties of flax in the Pa Harakeke, what protocols need to be observed, how flax should be harvested, and how to leave the site safe for the next group of users.

Permission to harvest the flax is required. Enquiries to Paula Rigby, tel 941 6413, Christchurch City Council.



Ranger's Report



Dr Eric Godley

The planting day held recently at the Styx Mill Conservation Reserve was a great success. Around 200 people along with 9 of our triumphant Crusaders rugby team turned up thanks to the event being sponsored by Ricoh. Once again Trees for Canterbury provided genetically sourced native trees and shrubs for the planting. Trees for Canterbury have been donating trees to the Styx Mill Conservation Reserve for over 6 years with over 2500 plants being donated this year alone. The latest planting is an extension of previous plantings carried out by Trees for Canterbury and the local community in the area adjacent to the Styx Metro Station.

Dr Eric Godley, a well known botanist, has a specially planted area of kowhai at the Styx Mill Conservation Reserve in recognition of his work. Recently he and I travelled to a secret location in the West Melton area to see if we could locate a rare prostrate kowhai that Dr Godley had photographed over forty years ago. As we approached the area that Dr Godley

thought was approximately where the kowhai should be, we realised how modified the area had become due to the increase in the development of lifestyle blocks. Driving further along we discovered what we had come to see - a large prostrate kowhai. This particular kowhai has much smaller leaves and dark brown to even black seeds. The tree grows out in a sucker type fashion and has orange flowers compared to the normal yellow flowers of kowhai. Seeds were gathered from this kowhai tree and will be propagated and planted out in the Styx Mill Conservation Reserve.

Styx river plantings have been ongoing with previous years' plantings now starting to become well established. This is providing a fantastic corridor for various wildlife including native birds whose numbers appear to be increasing.

John Parry, Park Ranger



Prostrate kowhai

Report from the Guardians of the Styx

The Guardians have continued to be busy since the last Styx Newsletter. Some of us took part in planting days, such as two at Styx Mill Conservation Reserve. Several members also cleaned up around an old dump area near the Styx on "Clean Up The World Day".

The Group continues its usual speaker programme; this year attempting to have some of the topics tie in with other events occurring in that month.

I continue to represent Guardians of the Styx on a partnering group that monitors progress on the new Styx overbridge being constructed on the Main North Road. My role has been to ensure that there has been minimal effect on the river during construction (especially on the culvert extension to accommodate the new traffic lanes). I am delighted to say that we have no complaints.

Two members of our affiliated group, the Styx History Group, are close to completing a second book about the Styx area. On sale later in the year, this book looks at almost 100 pioneer families and their activities.

*Dennis Hills
Chairperson
Guardians of the Styx*

Editorial Contact

This Styx Newsletter is produced as a service to the community by the Greenspace Unit of the Christchurch City Council.

The newsletter is distributed as widely as possible through libraries, Service Centres and other such outlets. If you would like to receive a personal copy it can be mailed directly to you. Back copies can also be viewed on the Styx website at www.thestyx.org.nz.

If you have any suggestions, comments, or enquiries regarding subjects mentioned in the newsletter, please contact:

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email stephaniek@clear.net.nz

Coming Events in The Styx

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| 28 August 2005 | 1- 3.30pm | Annual Styx River Planting Day Venue: 608 Marshland Road Planting, weeding & BBQ Enquiries to Park Ranger Arthur Adcock 027 226 7801 or 941 7440 |
| 18 September 2005 | 1- 3.00pm | Clean up the Styx Meet at Janet Stewart Reserve Cnr Marshland & Lower Styx Roads BBQ and hot drinks after the clean up Enquiries to Dennis Hills 352 5545 |

