

Kelvin Nicolle Talk at the River March 2020

Kelvin Nicolle. Waterwatch.

Stream Study notes:

There was a lot of sewage in the Lincoln area years ago. It was treated and spray irrigated onto farmlands however not all was soaked up into the ground, and excess went into the aquifers

All pharmaceuticals excreted into the toilets >sewage> e.coli and bacteria broke down the sewage but this resulted in polluted streams. Many streams have traces of by-products of pharmaceuticals, antidepressants and contraceptive pill product.

Farmers used to use DDT as an insecticide but bacteria converted it to a more toxic chemical.

Bacteria are not all bad. They are drivers of the Carbon cycle.

The Selwyn River is a Spring fed > west of Lincoln

Water comes down the hills underneath the ground and resurfaces in Springs.

Coes Ford was a wetland area (Big Bog through to Travis Swamp). This is why the Roads and Railways were built further out on the Canterbury Plains.

The Canterbury Plains reflects Intensive Farming that has been going on for 150yrs. Because grass did not survive the many droughts of the Plains, farmers planted Clover as feed for their stock. The roots of the clover have nodules with nitrogen-fixing bacteria. Excess nitrogen (not needed by the plant) leached out into the ground and into the waterways.

Phosphates were used by farmers as fertilizers but excess binds onto the clay soil and is leached away when it rains.

The Health of the river > what lives in the river. The Selwyn River at Coes Ford has a stoney/gravelly bottom. It is classified as a springfed rural stream.

You won't find Stoneflies here. They are found in Mountain streams.

Some Important Data

True Left Bank. GPS E1552800 N5161727

Ecan Website – Find the River Flow at Coes Ford on the 23rd March 2020.

- Used a D Net with 300mm mesh size.
- PO_4 > elemental P x.309
- Nitrate reading was 3.8 (has been the same for the last 25yrs) All 3 samples the same.
- Temperature 14.4 – Variability may be due to battery.
- Dissolved Oxygen 8.37
- % Oxygen Saturation 83.4
- pH 7.5 – all the same. This shows High Confidence -98.9% Confidence Level.