River Estuary Watch

River-Estuary Care: Waikouaiti – Karitane

DECEMBER 2019

Waikouaiti River Estuary Study

The 10th annual research evening was held at the Marae recently, where marine science students presented results of their research into local aquaculture and fisheries. Here is a summary of the findings from one project.

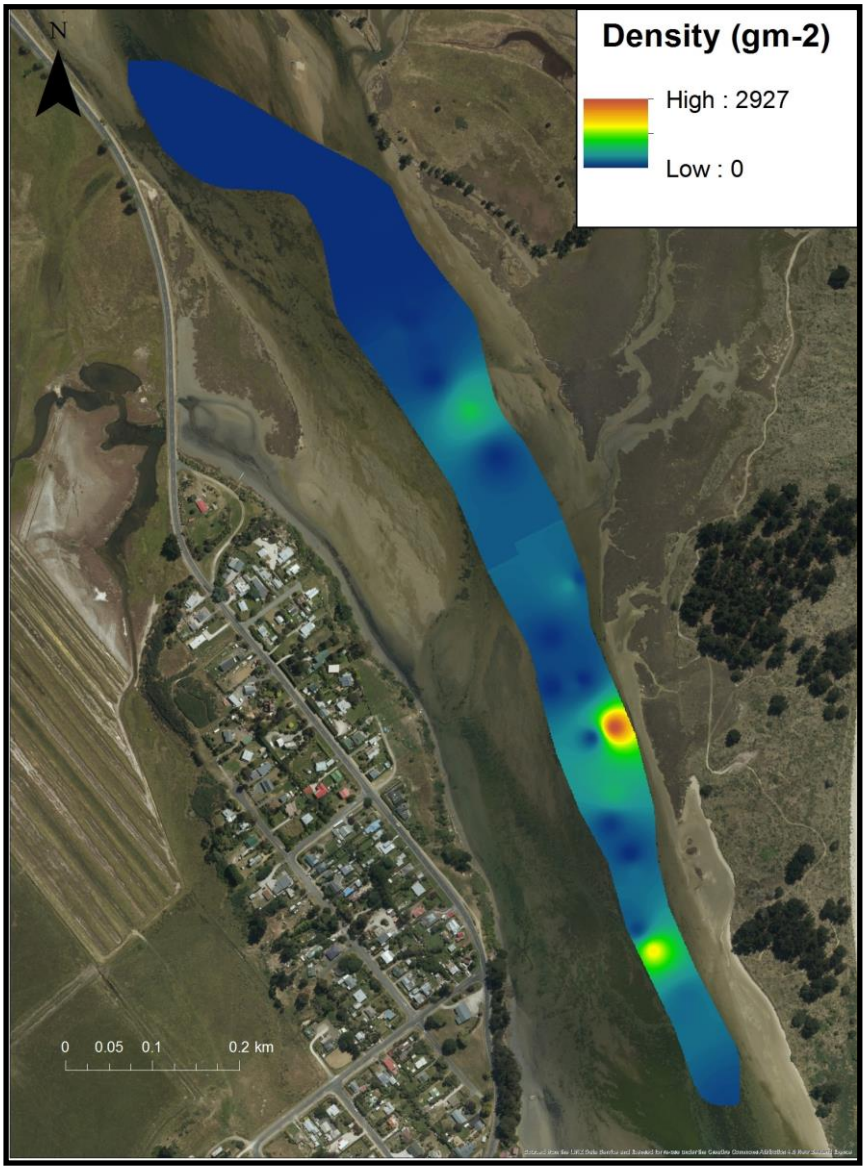
Tēnā koutou
Ko Becky tōku ingoa
Nō Karitāne ahau

For my Honours project this year, I investigated nutrient uptake in intertidal seaweeds in the Waikouaiti River Estuary. This involved quantifying the seaweed biomass in the estuary, and through calculating uptake rates of the species present, I was also able to estimate the removal of nitrate, ammonium and phosphate by the seaweed. Elevated nutrient levels are detrimental to aquatic ecosystems, and so nutrient uptake by seaweeds can have a positive effect by improving water quality.

Fieldwork carried out in May found 76% of the seaweed biomass was the red algal species *Agarophyton chilense* (ex. *Gracilaria chilensis*) and 21% was the green algal species *Ulva intestinalis* (the final 3% was other *Ulva* species). These biomass results were interpolated across the approximately 18 ha seaweed bed in the estuary. This produced a heat map of biomass density, as shown in the picture. Biomass tended to be higher in the downstream area of the estuary, and the highest density recorded was around 3kg per m^2. The mean density was 81.9g per m^2 for *A. chilense* and 16.1g per m^2 for *U. intestinalis*. The total seaweed biomass of these two species within the sampled area was estimated to be 38,422kg.

The nutrient uptake rates of the seaweed species varies depending on the nutrient concentrations in the water. Based on the nutrient concentrations measured in the estuary at the time of the biomass sampling, it was estimated the seaweed bed could remove 4955kg of nitrate, 708kg of ammonium and 53kg of phosphate annually. However, the actual nutrient removal by seaweeds would vary throughout the year as the seaweed biomass and nutrient concentrations fluctuated. Overall, it was found that the seaweed bed provides an ecosystem service through removing large amounts of nutrients from the water.

Becky Kerr



150th Bird Count

On the 3rd November 2019 the bird monitoring group completed their 150th count.

This is a fantastic achievement - well done and thanks to all those (past and present) that have given up so much time to make it possible. You can't beat walking around our beautiful river on a hot summer's day, counting birds in good company. However, the weather isn't always kind and the commitment shown on the not so nice cold and windy days in winter has been inspiring.

River Estuary Care Birdwatching group began regular counts in November 2001. Bird count results are entered onto a data base every 6 weeks throughout the year. Bird counting observation stations are fixed and run from the upper Merton Arm to the river mouth. It is one of the longest running bird counts in the country.

The data is analysed by Derek Onley (ornithologist and illustrator) who has been a supporter and mentor to the group from its early days. The results, which are passed on to the national bird data base, give invaluable information on the environmental health of the estuary. Fluctuations in numbers of migratory birds can also reflect environmental changes overseas.

This year some members of the group have been helping out with bird counting at the Waikouaiti Lagoons. If you would like to brush up on your duck identification skills, please come along.

Hope to see you all next year.

Dave Yeoman

150th Bird Count…*continued*

A special afternoon tea to reward the counters and recorders

Karitane School to Join Source to Sea project

Healthy indigenous biodiversity is dependent on healthy surface and groundwater systems. The Halo Project is working to support communities develop projects to look after their water ways.

We developed the *Source to Sea* education project in response to concerns of residents within our local communities in the West Harbour-Blueskin area (North of Dunedin), about declining water quality, vulnerability of low-lying settlements to flooding and sea level rise, quality of kaimoana, and their desire to understand the impacts of land use on the marine environment.

Source to Sea has multiple links with the school curriculum and suits the inquiry model of learning. Students in participating schools work with their teachers, scientists and environmental educators, to understand the different factors (physical, social and economic) contributing to their local catchment's health, in interactive and engaging ways. Examples include;

- Exploring catchments through innovative and custom-designed GIS technology in a GIS lab.
- Learning about Maori history and perspectives.
- Getting out of the classroom and exploring their catchment, sampling water quality and stream life.
- Interactive learning with the Marine Studies Department Aquavan.

Each school develops their own action plan to help improve the health of their catchment, based on what they've learned through their inquiry, and shares it with the other participating schools and their communities.

We are delighted that four new schools will enter the project in 2020. One of these is Karitane School. This school already has a strong record of learning and action, based around the Waikouaiti River. Our aim is to build on this great work and to coordinate with the organisations who have supported the school in the past. The River-Estuary Care Waikouaiti Karitane Group is certainly one of these.

John Fisher
Environmental Educator – Source to Sea Project

Call for Native Seedlings from your Garden

Do you have native plant seedlings coming up in your section? A cabbage tree putting out wee seedlings? A place where you notice young kowhai plants growing? Any other native plant starts? Over the years we have incorporated backyard native plant starts into our system of habitat restoration.

Would you like to donate those seedings to our habitat restoration projects? We have a shadehouse and experienced people to see those seedlings through the next seasons of growth. We have volunteer programmes and planting days to see those native plants are part of habitat restoration projects going on in our catchment.

If you would like information or help to donate seedlings please contact George Meikle on 022 610 4422.

Ki Uta Ki Tai

DON'T FORGT TO CHECK OUT OUR WEBSITE,
set up for us last year. It has lots of background information, newsletters going back 10 years and updates and pictures of our ongoing projects

https://riverestuarycare.wixsite.com/riverestuarycare

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River - Estuary Care
R E C W K
Waikouaiti - Karitane

Would you like to volunteer?

Rivercare projects work because people volunteer time, advice, and donate funds, plants & materials.

- Would you like to be notified if we are having a planting day in the field or a potting-up day at the shade house?
- Are you keen to help in other ways?

Please contact Patti Vanderburg vburg8113@gmail.com

To become a friend of the River and Estuary Care: Waikouaiti—Karitane	Phone or email Brad – 03 4658334 or brad126@xtra.co.nz
Should you wish to kindly make a donation	Online: ▪ Enter our name: Waikouaiti-Karitane Rivercare Group Inc) (this will appear on your statement) ▪ Enter our bank account number 060942 0190792 00 ▪ Enter your name and reason for payment e.g. donation to friend of Waikouaiti-Karitane Rivercare Group (Inc) (this will appear on our statement) or post donation to 1333 Coast Road, Karitane

River-Estuary Care Waikouaiti - Karitane
Active since 1999 – Incorporated in 2001
Coastal Otago Conservation Award for 2005
Objectives

- To restore balance to Papatuanuku (Mother Earth).
- To have a well-informed community about our river and estuary.
- To have our community participating in sustainable resource practices.
- To have a healthy, productive river and estuary ecosystem (fishing, biodiversity, general health).
- To promote an understanding of the inter-relatedness of our river and estuary ecosystem with adjacent ecosystems.

Anyone interested in supporting the above objectives may join!
Would you like to help with a project this year? Then contact

- Newsletter – Hilary Yeoman. Ph 465 7687
- Revegetation project – contact Andy Barratt. Ph 021 890 048
- Education, information and advocacy project – contact Patti Vanderburg. Ph 465 8113
- Birdwatching – contact convener Dave Yeoman. Ph 0220991202

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