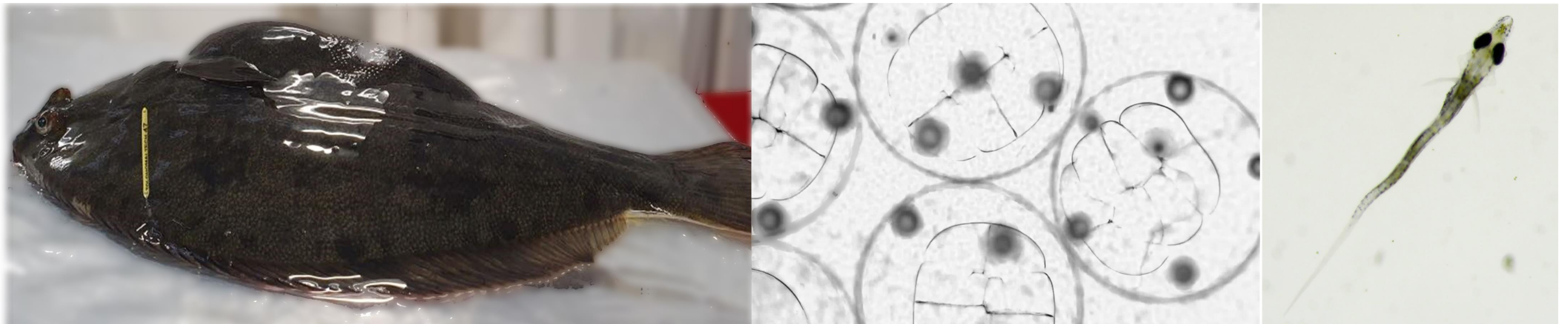


Captive breeding of Pātiki tōtara for community aquaculture

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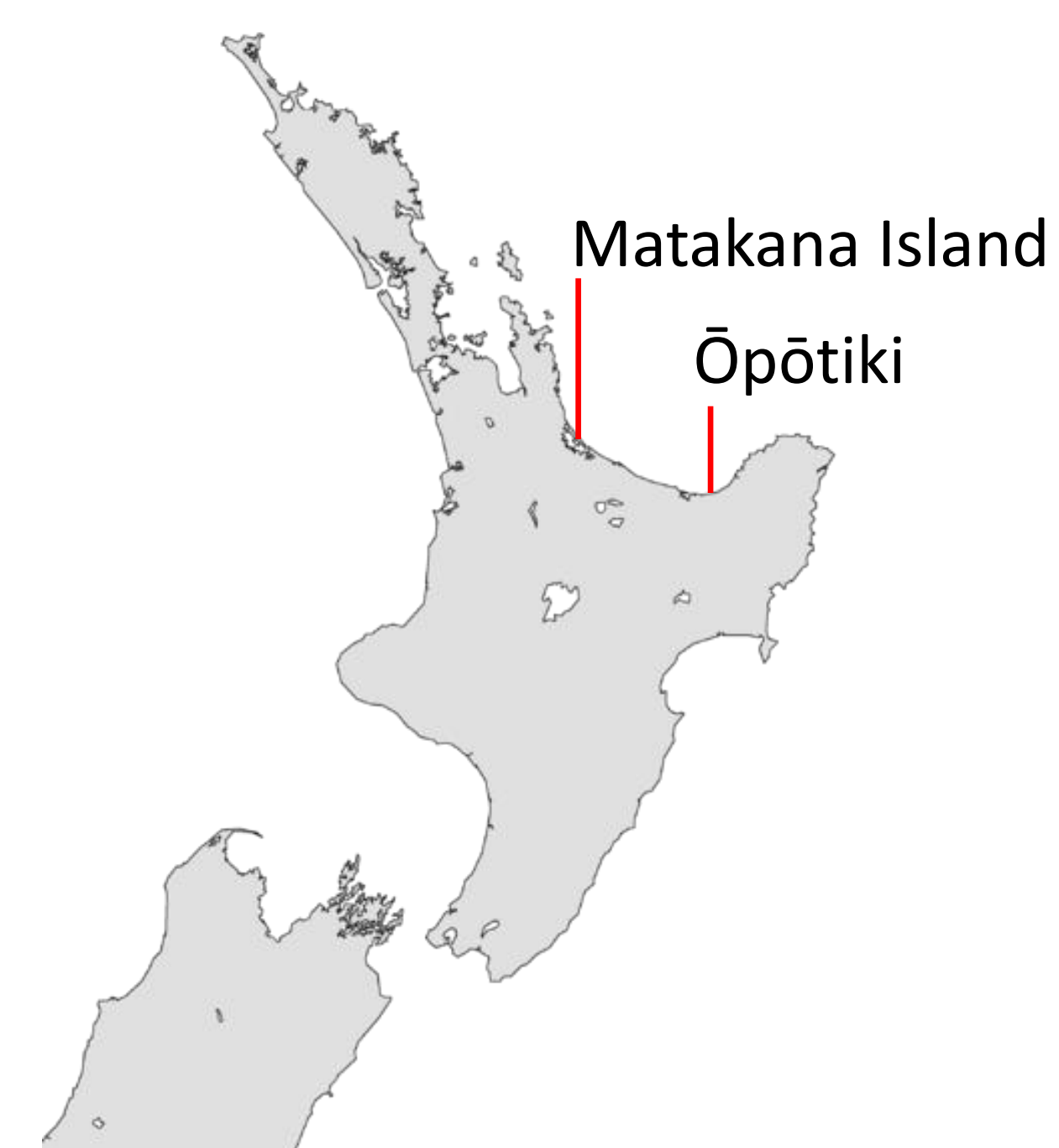
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Background

Pātiki tōtara, or yellowbelly flounder (*Rhombosolea leporina*), present an exciting opportunity to develop cooperative aquaculture opportunities in rural coastal communities.

To progress this aspiration, we wanted to develop a protocol for the production of larval pātiki from wild caught broodstock fish. Pilot work indicated that wild fish may suffer chronic capture stress which could stop the fish from breeding.



This project is a co-development partnership with hapū from Matakana Island and Whakatōhea.

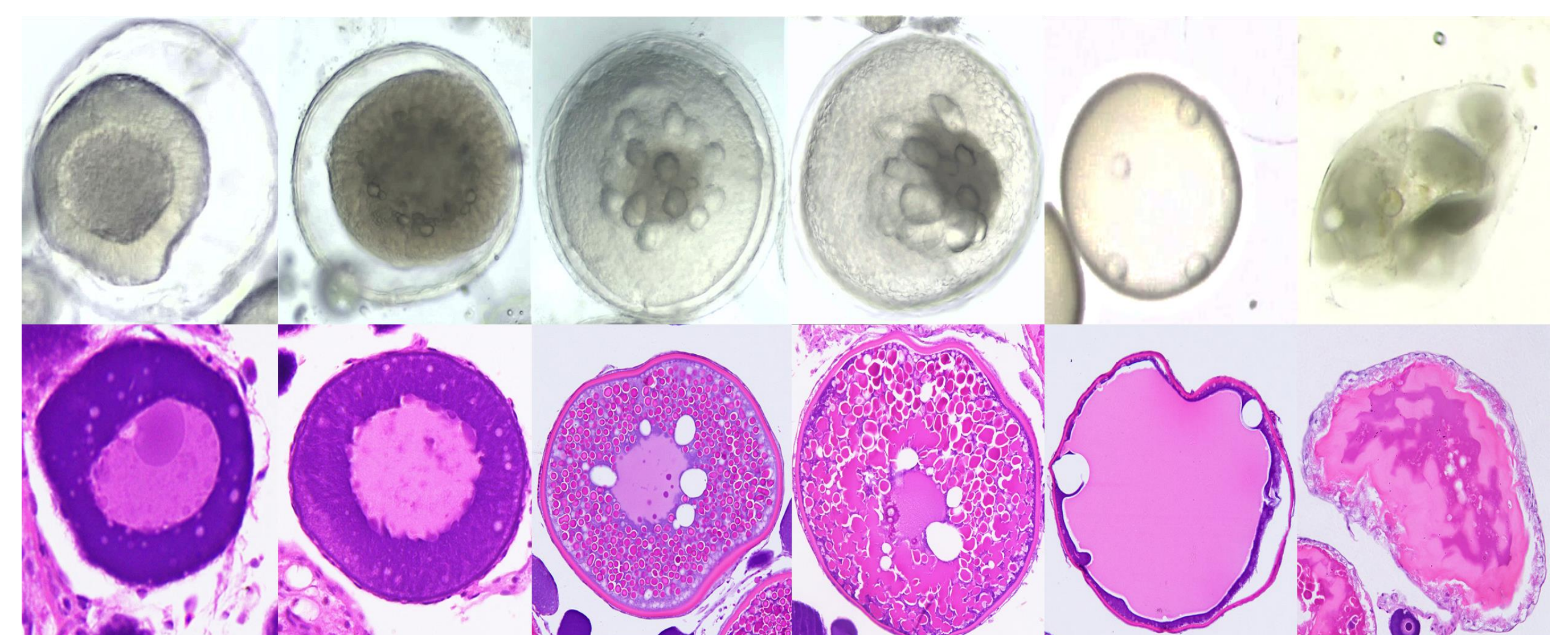
What we did

Wild caught pātiki tōtara were put into 1600L seawater tanks and treated with a therapeutic pharmaceutical to induce reproduction. This is similar to IVF in humans.

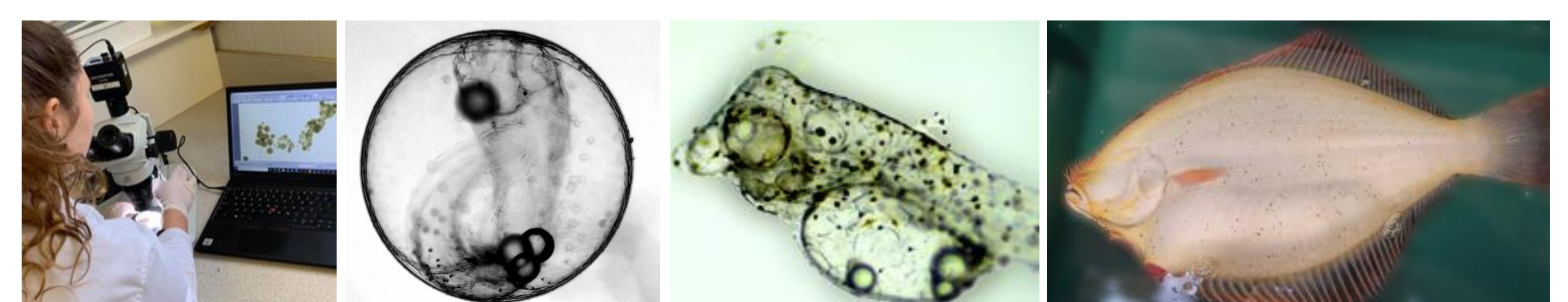
Three groups of nine fish were given a single injection of one of the following treatments: a high (100 µg/kg), low (50 µg/kg), or control (0 µg/kg) dose of gonadotropin releasing hormone analogue (GnRH_a).

What we found

- Reproductive failure occurred in the wild caught pātiki tōtara that did not receive GnRH_a treatment.
- Treatment with GnRH_a led to successful reproduction in female pātiki with 50 µg/kg being the most effective treatment.
- High fecundity (33,915 ± 7435 eggs/100 g BW) and fertilization rates >80% were achievable using GnRH_a treatment.



A key to assess reproductive maturity of pātiki for optimal GnRH_a response was developed. Fish should have oocytes over 310 µm diameter.



Pātiki tōtara ovulated multiple egg batches with 72 hours between batches

This work is part of Project 2.16. A novel approach to aquaculture in Aotearoa