

Tatsuno City is famous for the "Akatombo" and Akiakane motif. These dragonflies are decreasing and are registered in the Hyogo ver. Red Data Book. We considered the reasons why the Akiakane are decreasing and conducted research with the aim of reviving the original landscape for the flying Akiakane and improving the biodiversity of rural ecosystems.

Revival of "Village of Red Dragonflies"

The purpose was for the revival of the "village of the red dragonflies". The original scenery of the nursery rhyme "red dragonfly" is seen in Tatsuno city. However, we can't see red dragonflies due to their decreasing. Therefore, we tested for the revival of the red dragonfly and improvement of the biological diversity using rice terraces.

Why red dragonflies are decreasing

- "Box treatment agent" affects the growth of red dragonfly.
- The increase and dried-out paddy field.
- Red dragonflies are preyed on by different types of natural enemies.



What is biotope?

A small habitat created or restored so that animals and plants can live a constant life.

Bio + **topos** → **Biotop**
Life Place

Etymology : Greek

Make a biotope by using rice terraces.



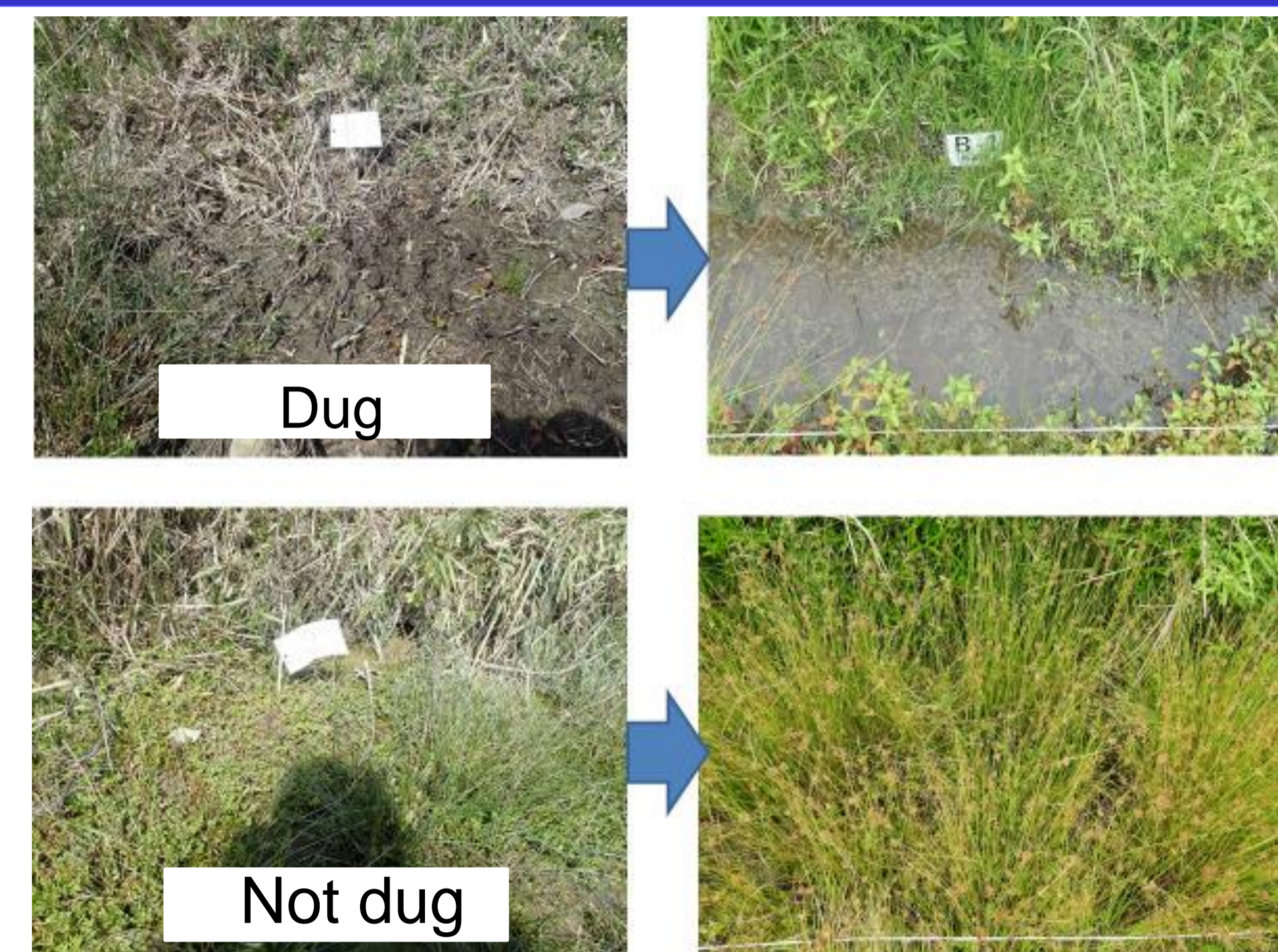
Labor is doubled and harvest is halved → increasing abandoned rice field. Rice terraces have reservoirs at the top → easy to solve water rights issues.

How to make biotope

We made 16 biotopes in the dragonfly pond. The height is 0.7 meters and the width is 3 meters. 8 of the 16 were dug about 10 cm deep. The remaining 8 locations were left untouched.

Not dug	Dug	Not dug	Dug	Not dug	Dug	Not dug	Dug
A1	A2	A3	A4	A5	A6	A7	A8

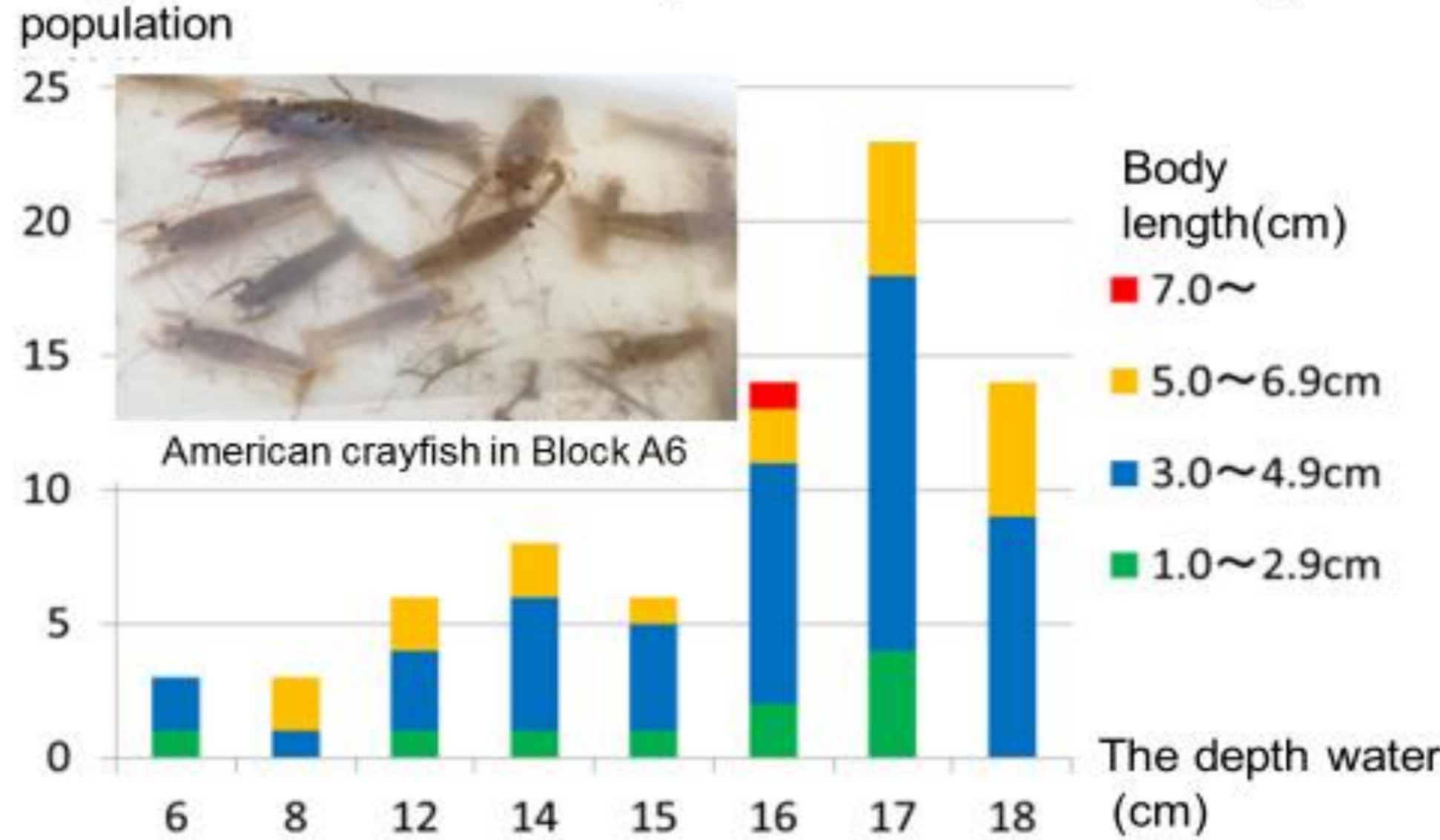
Dug	Not dug	Dug	Not dug	Dug	Not dug	Dug	Not dug
B1	B2	B3	B4	B5	B6	B7	B8



Result of biological survey



Relationship between population and depth of American crayfish



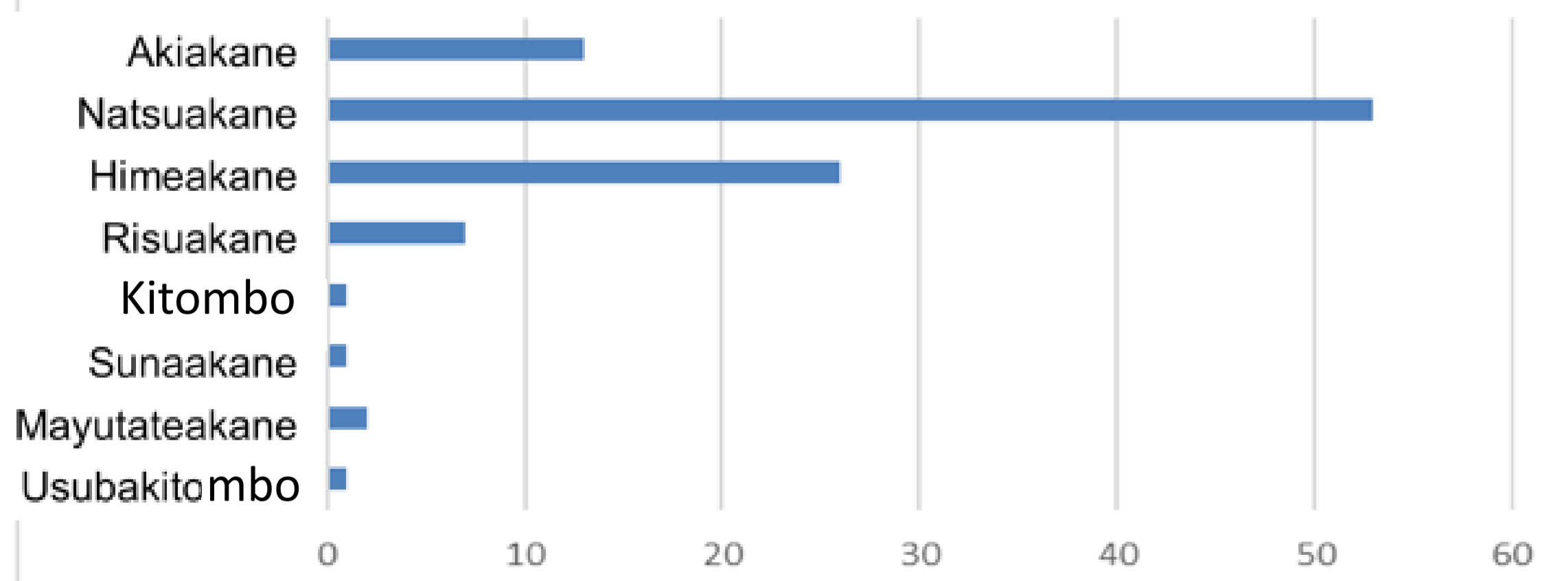
Discovery of Akiakane



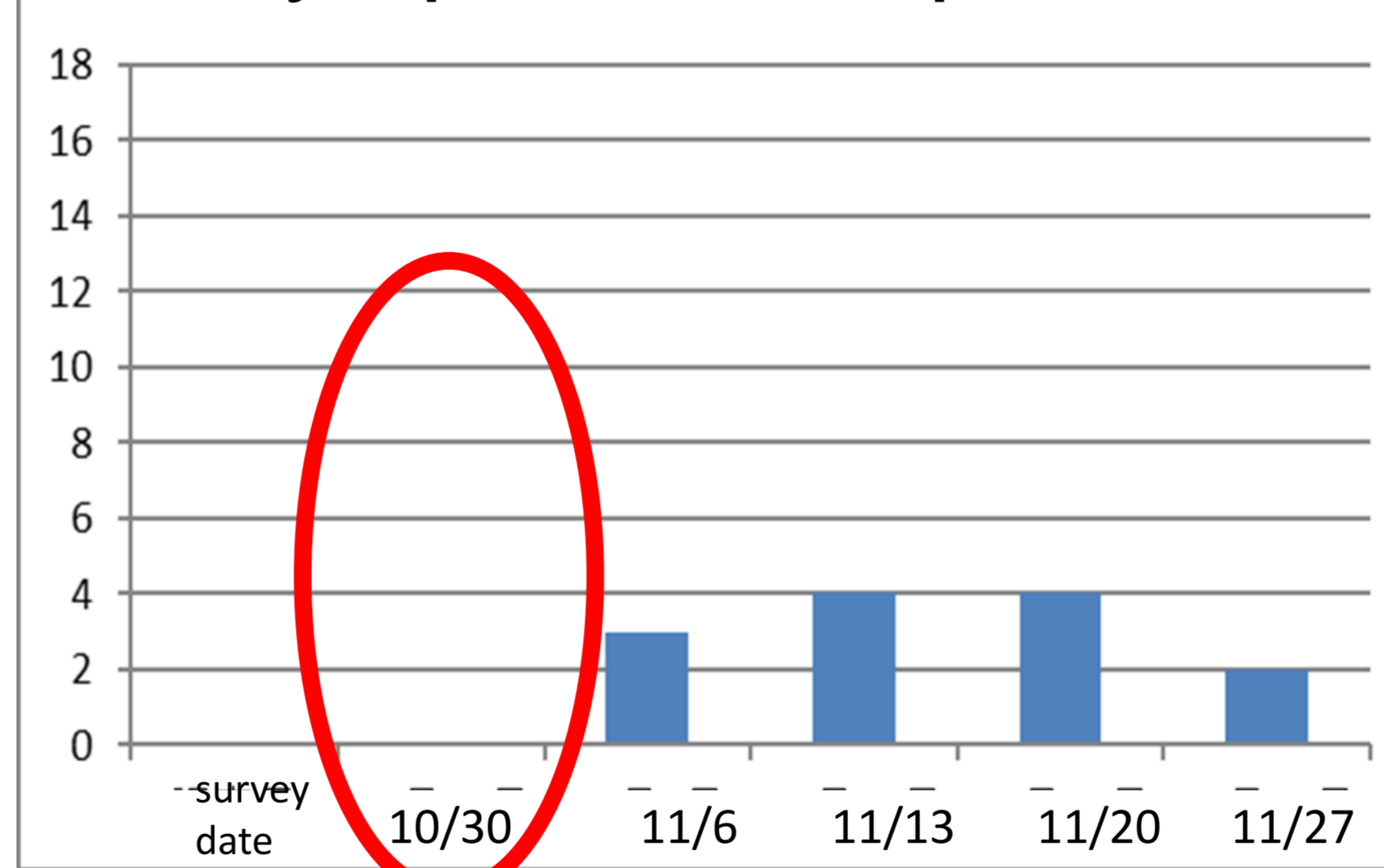
We raised two dragonfly larvae, but doubted which kinds they were. We checked them. → Eggs can continue sleeping even though there is no water.

Dragonfly population research

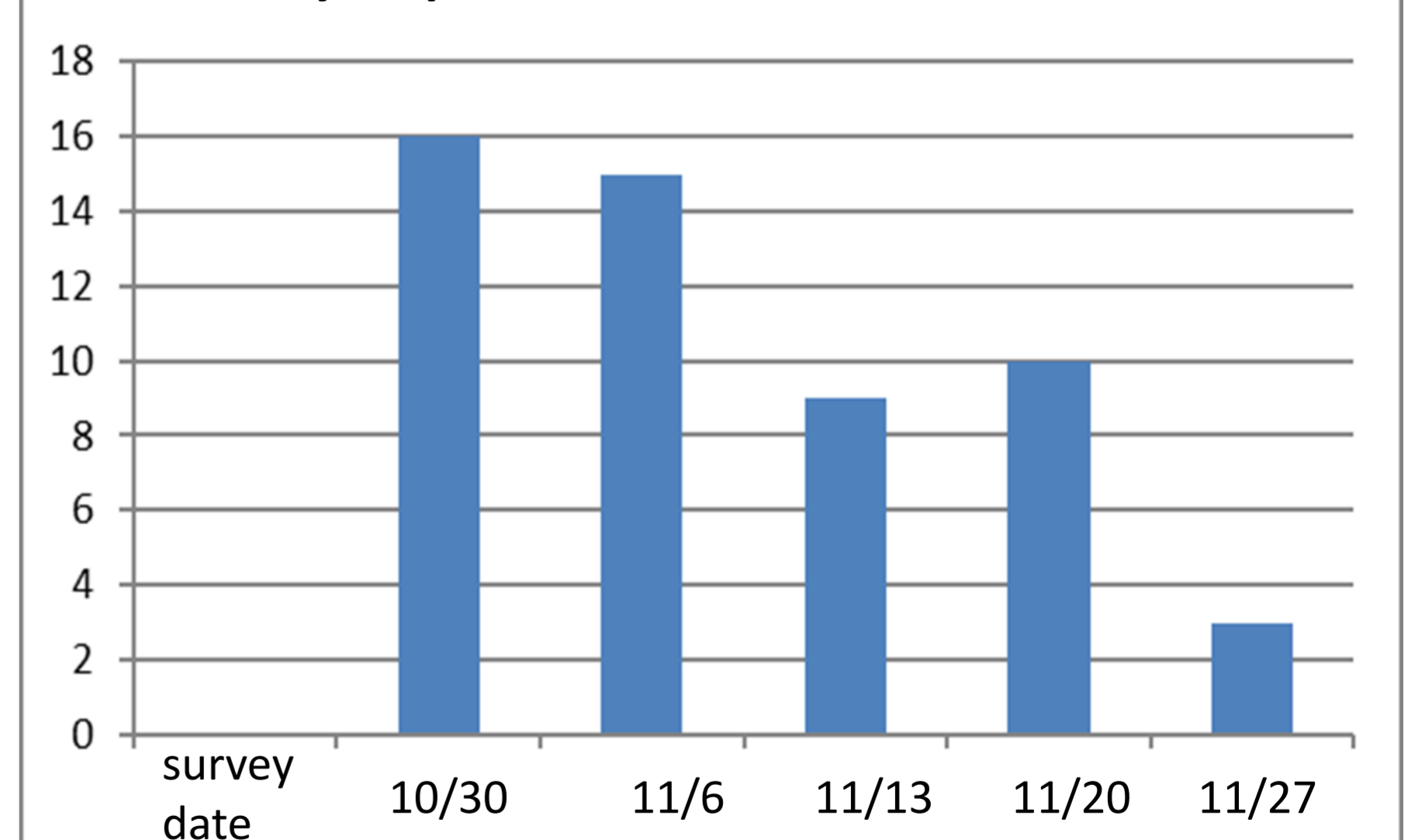
10/30~11/27 We researched a hour for five days



Sympetrum frequens



Sympetrum darwinianum



Result and Future Plans.

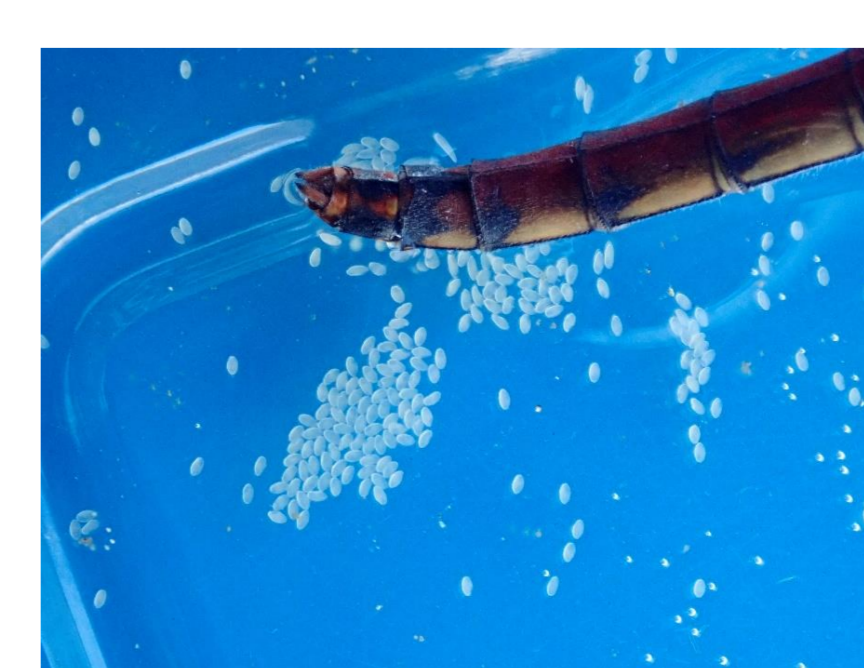
- We collected larva of dragonfly immediately after making the biotope. It suggests that larva of dragonfly remained in hibernation without water.
- We should check the natural enemies with collected eggs by mixed breeding.
- We should establish a rearing method for Autumn Darter and develop kits for elementary school students.



Sympetrum frequens



Sympetrum darwinianum



Artificially laid eggs



Laid Eggs