



Swimways - Linking movement ecology and fish conservation in the Wadden Sea

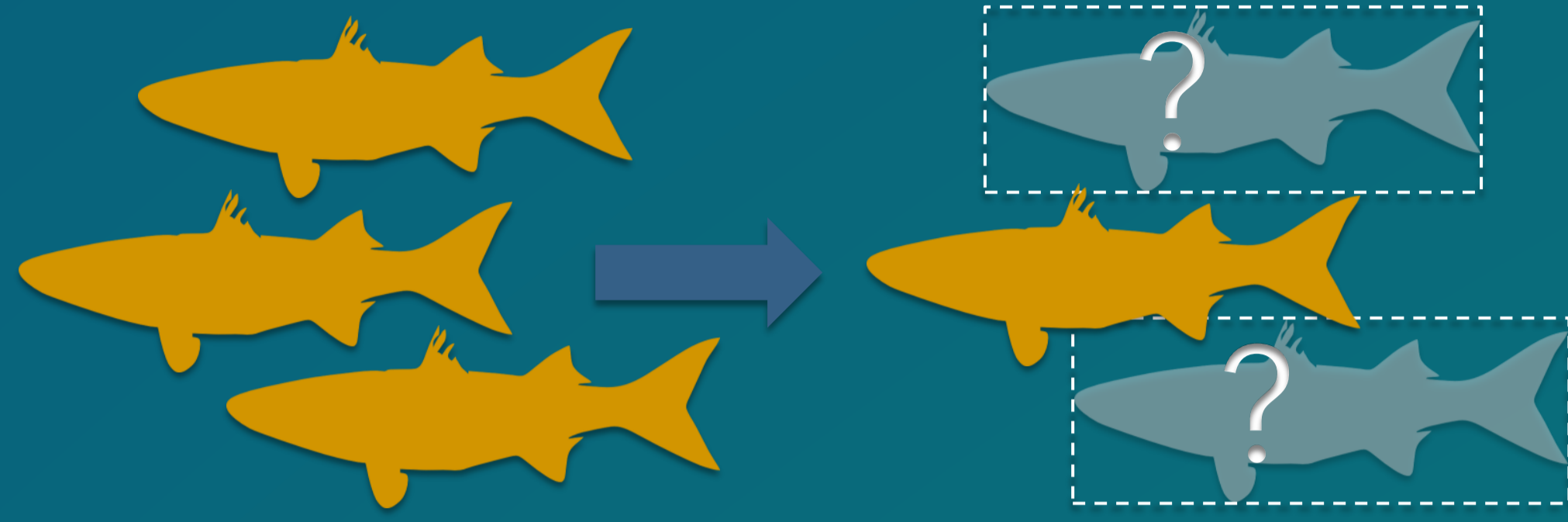
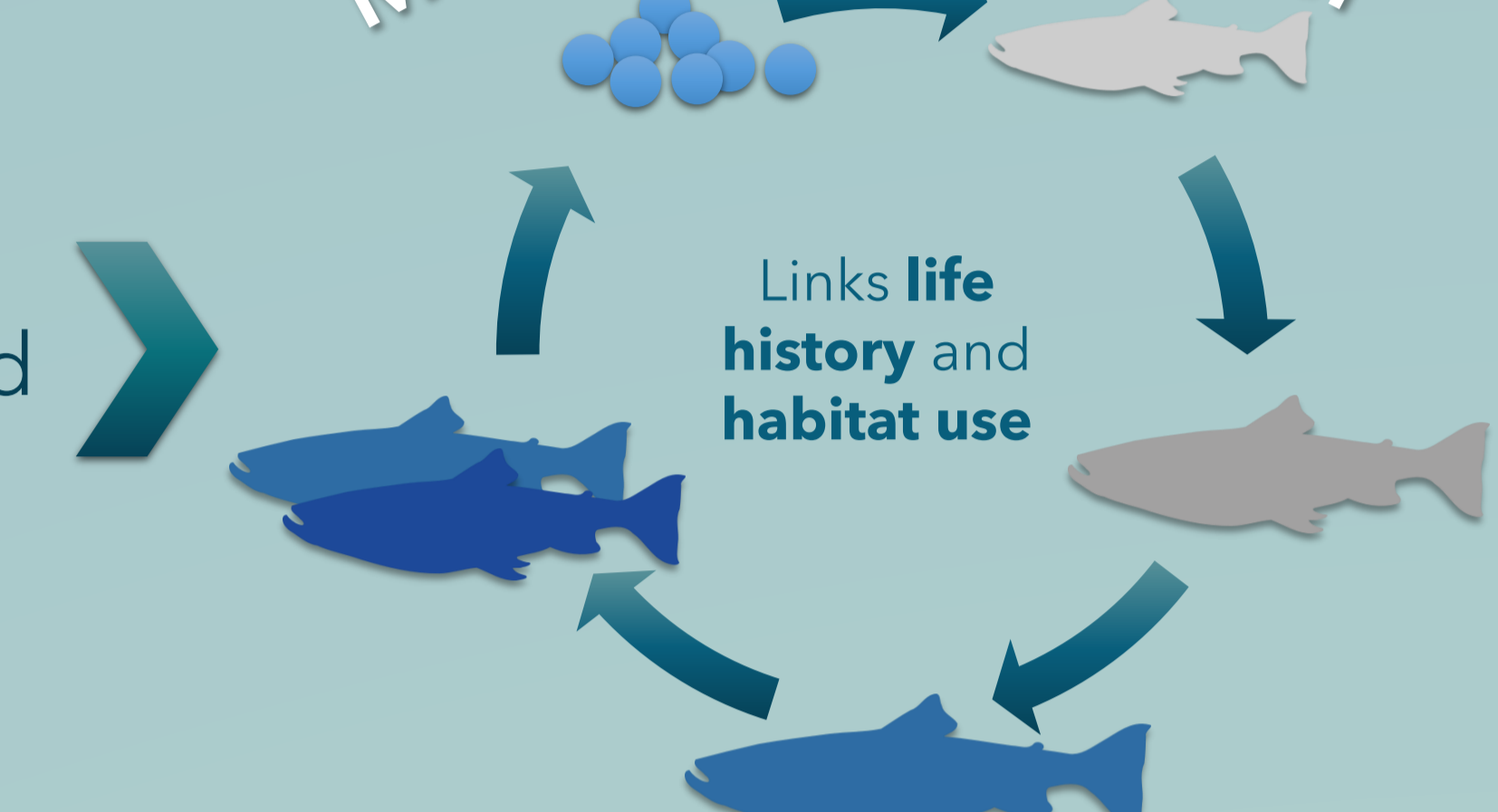
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PROBLEM & SOLUTION

Fish populations are **declining** at a **global scale**.

Our understanding of fish **life histories, movement behaviours, and habitat use** is **insufficient** to determine causes and create **management solutions**.

MOVEMENT ECOLOGY



Facing fish declines:

Following global trends, large fish in the Wadden Sea have shown dramatic declines since the 1960s.

The threats and stressors faced by migratory fish require further investigation.

Fishing pressure may not be the sole cause of observed declines.

CASE STUDY

THE WADDEN SEA

Houses over **160** fish species.

But how do fish **use** this **coastal habitat**?

It plays many important **roles** in fish life cycles.

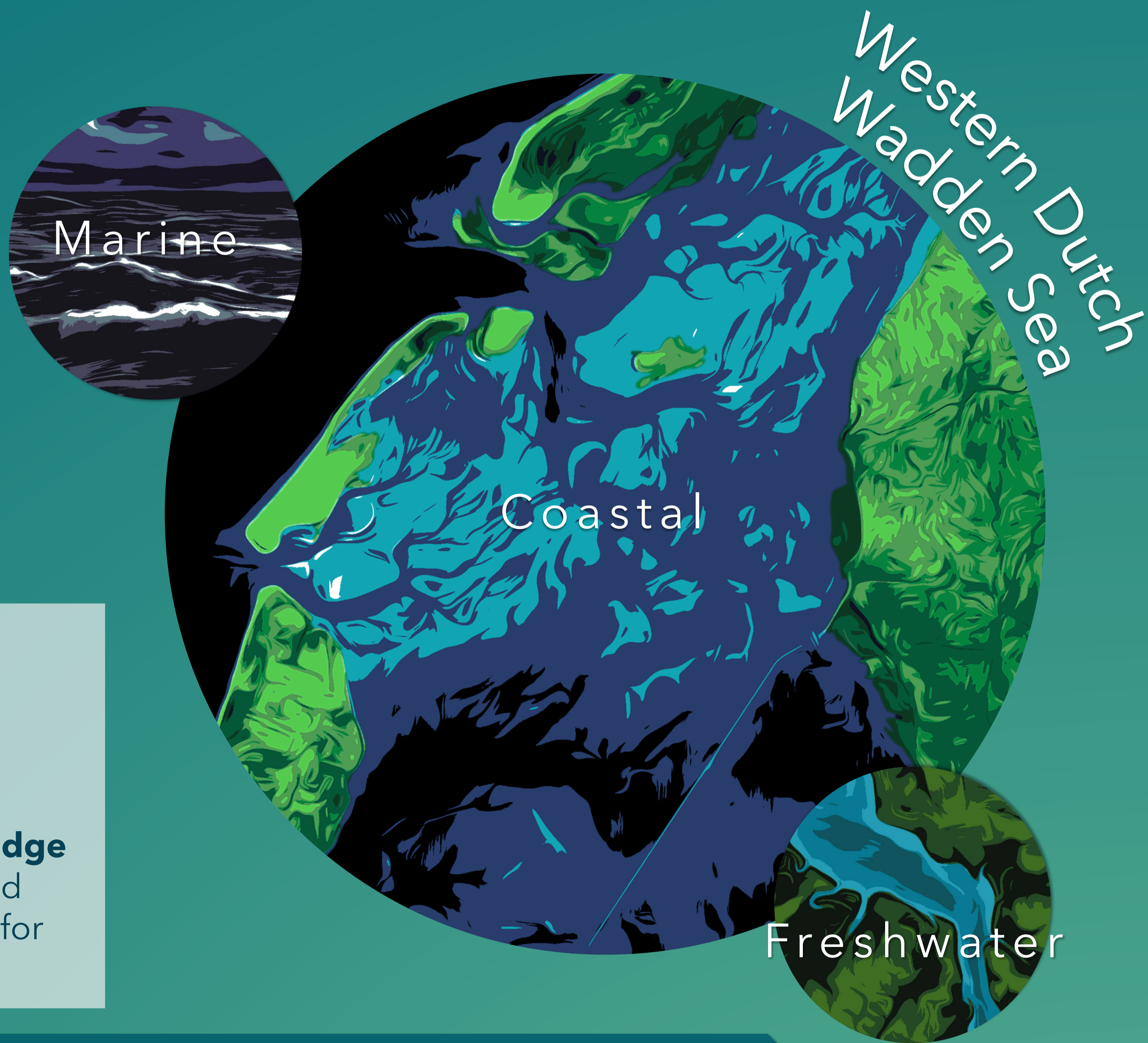
Little is known about the **migratory behaviours** and **habitat use** of large fish in the Wadden Sea.

Reviewing **global knowledge** of **fish movement** could provide valuable insight for future studies

NURSERY

FORAGING GROUND

MIGRATION CORRIDOR



RESULTS

UNDERSTANDING MOVEMENT USING FOUR EXAMPLE SPECIES

C. labrosus **Thicklip grey mullet**

Marine spawner

Seasonal migrant & coastal resident

Do environmental conditions drive habitat use in coastal waters?

Marine spawner

Seasonal migrant & coastal resident

Do individuals return to the same place year after year?

D. labrax **European sea bass**

S.(t.) trutta **Sea trout**

Freshwater spawner

Long-distance migrator between marine & freshwater

Are there common migratory pathways through the Wadden Sea?

Coastal nurseries

Long-distance migrator

How important is the Wadden Sea as a nursery?

T. galeus **Tope shark**

Global **literature** on fish movement highlights which **questions** have yet to be answered.

Telemetry studies will now help us **answer** those questions.

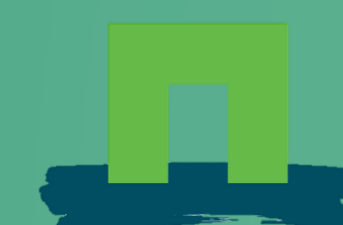
FUTURE WORK



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We are grateful for help provided by our project partners, as well as collaborating fishermen, students, and assistants who all helped made this research possible.



SCAN ME!
Learn more by watching my appearance at 25:05

