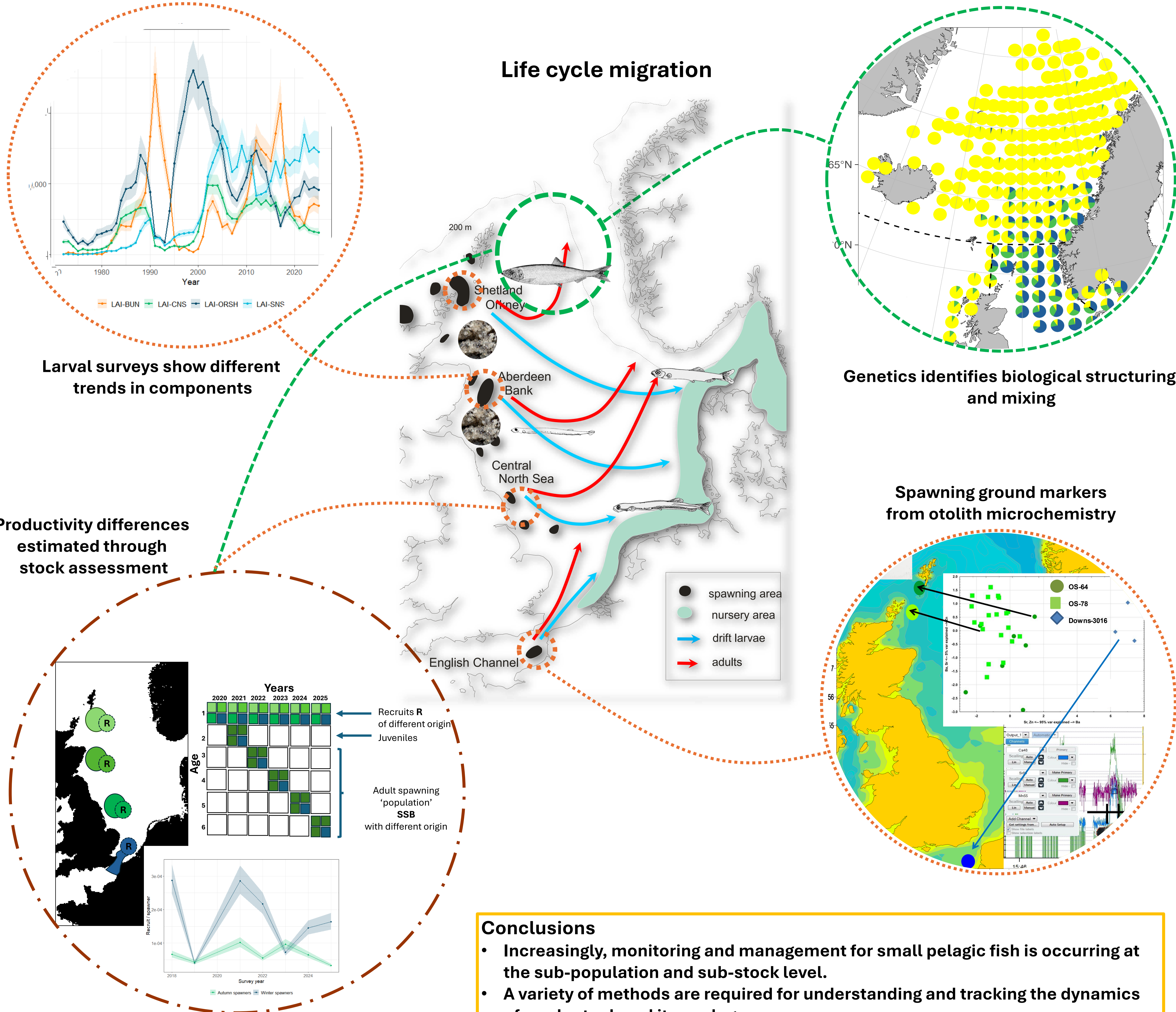


# Structure in small pelagic fish stocks: challenges for fisheries management

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Marine species exist across a continuum of 'population' structures, with small pelagic fish often exhibiting the most complex structuring within stock units. Management is spatial; but monitoring can be based on identifiable differences in biological traits (e.g. 'population' metrics, vertebral counts, body morphometry, genetic differences) and environmental signatures (e.g. otolith microchemistry, parasite communities). Should we monitor or manage?



## Conclusions

- Increasingly, monitoring and management for small pelagic fish is occurring at the sub-population and sub-stock level.
- A variety of methods are required for understanding and tracking the dynamics of a sub-stock and its ecology
- Ability to monitor the internal dynamics of a fish stock or sub-stocks (e.g. North Sea Autumn spawning Herring stock)
- Not advocating managing each of the separate sub-stocks separately with their own catch limitations
  - A major problem revolves around mixing during the principal fishing season and the complex management structure and exploitation rules that may be needed.