The Role of Aquaculture in Shellfish Restoration

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Overview

- Passive support
- Active contribution
- Policy drivers
- Concluding remarks

NB All comments are personal views, not necessarily representative of any of the organisations of which I am a member.
Neither a re-incarnation of a vanished or crippled eco-system, or a resuscitation of a marginalised species
But a restoration of a molluscan dimension to an integrated/balanced eco-system
Potentially with a food production objective, to contribute to the human food chain
Process not a project
DEFINITION OF AQUACULTURE:

**FAO:**
- intervention in the rearing process (stocking, feeding, protection)
- individual/corporate ownership of the stock

**Critical element is CONTROL over:****
- stock
- environment
CULTURE

Recirculation

Intensive

Ponds/Lagoons

CAPTURE

Stock Enhancement

Fisheries Management (Regulations)
Particularly when ‘molluscan resuscitation’, aquaculture can play a major role in facilitating the restoration process:
- The maturing cultivation bio-mass will contribute an incremental settlement of seed within and outwith cultivation lease area.
- Aquaculture production reduces demand pressures on capture fishery supplies.
Hatchery supplies:
- Selective breeding for more robust animals (e.g., disease resistance, improved growth, better resilience)
- Higher survival rate from larvae – spat – juveniles – adults
- Increased frequency of spawning
Active (2)

- Improved ‘management’ of resource development (business plans, spatial consents, scheduled deposits, etc)
- Managed introduction of ‘novel’ species:
  - ‘Novel’ to the region/estuary/embayment
  - ‘Novel’ to the country/continent
- Inflated strength/status of the shellfish sector, for negotiation with planners, regulators, government – even scientists!

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Coastal zones in Europe and elsewhere are under increasing pressure from population growth and urban development. Yet coastal zones are frequently areas of economic underperformance. Aquaculture can contribute to regeneration of such areas – and shellfish cultivation can/should have a leading role (environmentally benign, nutrient extractive, job creation, ‘appropriate’ scale of activity, etc) - also promoting ‘restoration’ efforts.
Policy Drivers (2)

Together aquaculture and ‘shellfish restoration’ can play a greater role in delivering coastal policy outcomes, as promoted via Integrated Coastal Zone Management, eco-system based fisheries management and the SEA Directive.

Together molluscan cultivation and ‘shellfish restoration’ interests can be stronger advocates for environmental improvements and the expansion of the shellfish sector (‘restoration’).
The ‘restoration’ lobby gains from association with shellfish aquaculture:
- Greater credibility
- Increased ‘economic’ and political leverage
- Access to wider funding sources

In summary, restoration is brought into the mainstream when it participates in alliance with shellfish aquaculture

And together we can promote appropriate research.
Industry Concerns

What does the shellfish cultivation industry gain from restoration activities?

- A potential competitor (alternative supplies)
- Exclusion from certain areas of finite estuarial resource
- Diversion of resources from cultivation sector (hatchery output, research funding, development support)

So why would we want to support restoration??
Synergy

- Together we form a more effective representative group, a stronger lobby.
- In addition, research topics can be identified that satisfy both commercial cultivation interests and ‘social’ or environmentally focused restoration efforts.
- But the science has to be relevant, hands-on and ‘non-ivory tower’.
The title of this Conference is ‘Enhancement & Sustainability of Shellfish Resources’ – and one element of sustainability is economic sustainability.

Recognition of that reality and acceptance of common objectives by the restoration lobby would enhance the lobbying efforts by aquaculture interests for molluscan cultivation developments.

And cultivation initiatives will benefit restoration objectives in practice.
Molluscan aquaculture generates a virtuous cycle of spawning and remote settling, which results in a natural restoration process.

Shellfish aquaculture and restoration should work together to promote their joint interests, both in general development efforts and specific situations such as in the recovery process for the US Gulf industry after the 2005 hurricanes.
Rational utilisation of previously over-exploited areas or environmentally recovering areas for molluscan cultivation will benefit both aquaculture and restoration.

Alliance with the commercial sector will allow restoration to participate in mainstream coastal zone developments, losing the ‘marine tree hugger’ image.
Together we can make it work!