Biogeographic habitat and species working groups (Mediterranean): Balearic & Yelkouan Shearwaters

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Balearic Shearwater
\textit{(Puffinus mauretanicus)}

Yelkouan Shearwater
\textit{(Puffinus yelkouan)}
Breeding population - distribution

Challenge to monitoring and conservation: Breeding habitat

- Breeding in island cliffs and islets
- Some colonies inaccessible and nesting caves not even located
- Small sample of nests for monitoring even in accessible cliffs
Challenge to monitoring and conservation: Behaviour

- Attend colonies only at night
- Not adapted to predation by land mammals (introduced)
- Pelagic species: long distance foraging movements feeding on small pelagic fish, plankton and fishing discards
Long distance commuting to foraging grounds during breeding: Balearic Shearwater
Long distance commuting to foraging grounds during breeding: Yelkouan Shearwater

Long distance migration: Balearic Shearwater

Diagram showing the distribution range of the Balearic shearwater. The map indicates areas of common, main foraging range, breeding season in orange, common, non-breeding season in blue, scarce, non-foraging areas, breeding season in yellow, and scarce, rare, non-breeding season in light blue.
Large spatial distribution during non-breeding season: Yelkouan Shearwater

Population and trends: Balearic Shearwater

- Population estimate: ~ 3000 br. pairs
  (~20000 indiv.) - discrepancies
- Trend: sharp decline (-14% annual)
- Low adult survival (~ 0.81) – main driver of decline

Population Viability Analysis – average extinction time 60 years (“optimistically”) if nothing changes
Populations and trends: Yelkouan Shearwater

Population estimate: 15,337-30,519 pairs
(46,000-92,000) individuals (???)

Trend: Decreasing

Low adult survival (~0.85) (Oppel et al. 2011)

No Population Viability Analysis available

Sources: Derhé (2013); BirdLife International (2018) Species factsheet
Main threats and Conservation Objectives
Survival (adult+)

Productivity

Threats

- Preadation (carnivores +)
- Fishing bycatch
- Point-source pollution
- Prey depletion
- Breeding habitat degr./disturb.
- Background pollution
- Harvesting (poaching)
- Marine windfarms
Fishing Bycatch - significantly affects adult survival (both species)

Conservation Objective: Reduce Bycatch to \( \approx 0 \)
Predation by introduced mammals: low reproductive success (rats) & adult survival (cats)

Conservation Objective: Control or eradicate introduced predators; maintain biosecurity to prevent re-incursions & act if they occur
Oil spills and marine pollution – mass mortality events & chronical effects

Conservation Objective: Minimise risk of oil spills and incidence of marine pollution
Light pollution from coastal development and vessels: Juvenile mortality and decreased colony attendance

Conservation Objective: Minimise light pollution in proximity to colonies and in MPAs
Human disturbance at colonies – abandonment/reduced breeding success

Conservation Objective: Remove or control sources of disturbance, especially within MPAs
Fish stock depletion – reduced breeding performance (& survival)

Conservation Objective: Maintain forage fish stocks at sustainable level (MSY)
Favourable Reference Values (FRV)
FRV: Favourable Reference Values (FRV) – what can we use?

- Lack of data prior to 1990s / 2000s
- Accurate and complete population census unfeasible – risk of identifying spurious trends
- Increased population estimates reflect increased knowledge and research efforts rather than actual increase in population
- Use of demographic parameters (e.g. adult survival & breeding success) as proxies rather than population size and range
- Standardise efforts and methods across range
- Long-term monitoring – need for secure sources of funding
Conservation Measures
Bycatch

- Carry out studies where there is lack of data (most of range in case of Yelkouan Shearwater)
- Set monitoring programmes (observers, logbooks,...)
- Where problem identified, develop, test and implement mitigation measures (site & fishery specific)
- Involve fishermen in the process
- Adaptative approach (revise regularly)
Predation by introduced mammals

- Rats: eradication or, when not possible, seasonal rat control
- Cats: keep away from colonies – fencing, removing (efforts needed to raise awareness & cooperation with animal welfare organizations)
- Maintain monitoring as part of biosecurity programme
- Reduce littering (organic waste) close to colonies
Oil spills and marine pollution

➢ Increase shipping safety
  • Divert shipping routes away from SPAs where possible
  • Divert or reduce bunkering activities close to colonies where possible
  (...)

➢ Improve response plans
Light Pollution

- Implement alternatives to white LEDs (…)
- Divert bunkering areas away from colonies
- Public campaigns to rescue stranded shearwaters
Human Disturbance

- Public outreach and awareness raising
- Access regulation/restriction to islets with colonies
- Zoning plans to limit boat access
  - No-stop zones
  - Buffer to colonies
Cross-border collaboration including non-EU countries
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- Highly pelagic species like the shearwaters require management actions implemented at large special scales

- Relatively small MPAs might not be effective but rather region wide regulations on threats at sea
Many thanks!