FACE briefing

The development of an AHM for the Quail

September 2025

Key takeaways

- The Quail has a very large population (5 to 9 million individuals in Europe). However, its cryptic nature and difficult monitoring produces relatively unreliable population size estimates. It is therefore crucial to generate population monitoring data based on specially tailored methodologies.
- While the EU trend is unknown, it is not believed to warrant an uplisting and is evaluated as Least Concern.
- Given the poor quality of Quail population size estimates, producing a set of management actions in the form of regulatory measures triggered by monitoring data (e.g., spring abundance index) would be the most appropriate approach. Such regulatory measures could include changes in hunting season length and/or in daily bag limits.

What is Adaptive Harvest Management?

Adaptive harvest management is a modern response to ensuring sustainable harvest of wild resources, such as game species. It provides a systematic approach to setting hunting regulations that allows for adapting over time based on management objectives, resource monitoring and data analyses. Scientific data is used to inform decisions and improve resource management in the face of uncertainty by learning from management outcomes and reducing the uncertainty. See FACE's info note on Adaptive Harvest Management.

Following the European Commission's work over the past few years in the framework of the EU Task Force on the Recovery of Birds, three species have been selected for the development of EU Adaptive Harvest Management plans (AHM): the Common Quail (*Coturnix Coturnix*), the Common Pochard (*Aythya ferina*) and the Eurasian Wigeon (*Mareca penelope*). These plans are currently being developed.

This FACE briefing draws on the key parameters to be taken into account during the AHM development phase for the Quail.

Technical and ecological recommendations
1. Population size and trend

For the Quail, it is important to acknowledge the heterogeneity of the trends available. There are decreasing trends, but also increasing and stable trends across Member States. Importantly, good trends seem to occur in the recent years in key Member States such as Spain and France. The trend in the EU is unknown but is not believed to warrant an uplisting and is evaluated as Least Concern[1].

No long-term international population trend is available. As the species is difficult to monitor, where national trends are available, it relies most often on passive acoustic monitoring. However, this method is known for significant underestimation of Quails detected (and even false negative), leading to underestimated densities and potentially to biased trends. Hence, a dedicated monitoring methodology for the Quail made of a combination of passive and active acoustic monitoring with catching and ringing has been developed in Spain and is also used France.

Reliable population trends will be crucial for the development and implementation of a sound Adaptive Harvest Management for the Quail, in order to be able to assess the population response to management measures.

The Quail has a very large population (IUCN estimate of 5 to 9 million individuals in Europe). However, while trends based on adequate methods can produce reliable results, its cryptic nature and difficult monitoring produces relatively unreliable population size estimates. The best available information for this species would be the population trends rather than population size.

2. Harvest management actions

As a consequence of the unreliability of population size estimates, producing a set of management actions in the form of harvest rates could be inadequate.

An adequate alternative would be to propose a set of management actions in the form of regulatory measures which could include changes in hunting season length and in daily bag limits depending on, for example, the spring abundance index (following the working example of the waterbird AHM in the U.S., and the fundamental principles of adaptive management in the face of uncertainty). This would require quick data processing to inform decision-making for the following hunting season.

"An approach to managing natural systems that builds on learning – based on common sense, experience, experimenting and monitoring – by adjusting practices based on what was learned" (Bormann *et al.* 1999)

3. Adequate flyway delineation

Flyway delineation will be an important prerequisite in the development of the AHM. This should be carefully achieved, as flyway delineations used so far may overlook significant connectivity between countries assigned to different flyways, such as Italy and France.
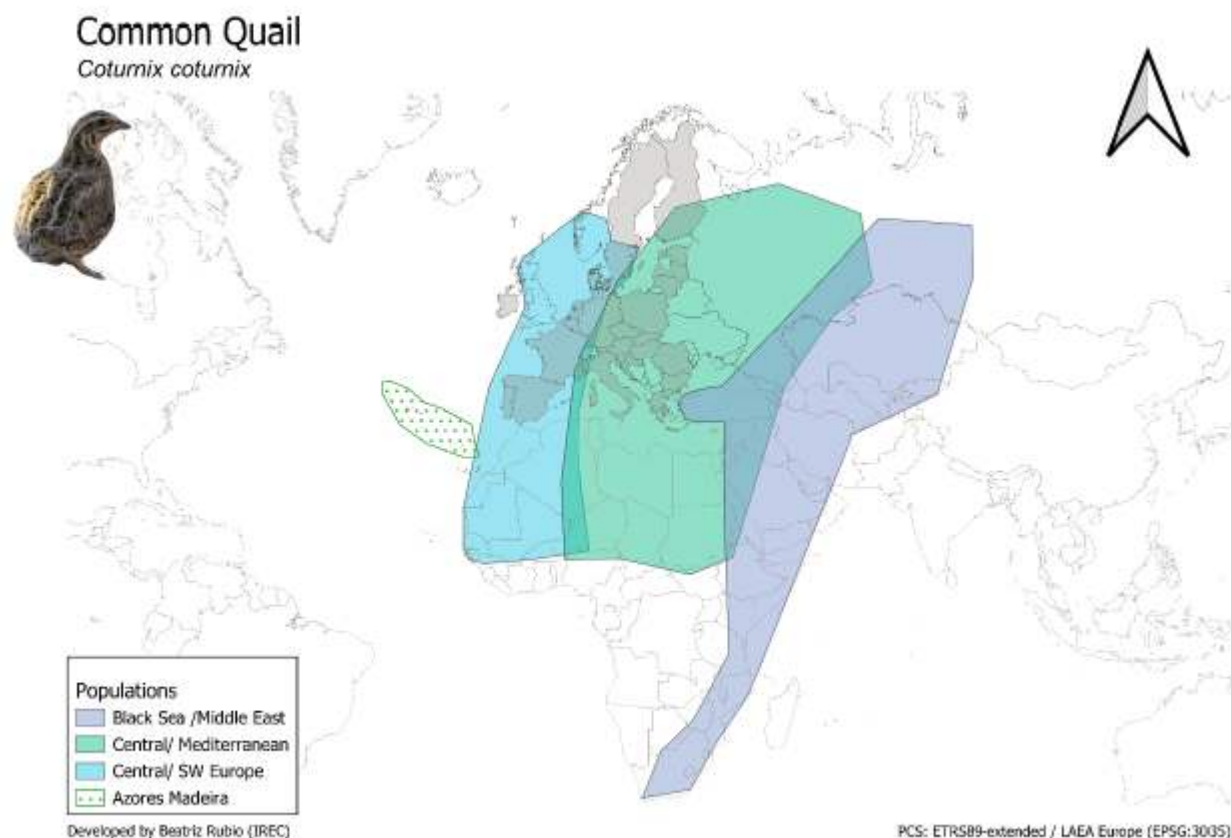

Figure 1: Common Quail flyway delineation used in the rapid assessment of harvest sustainability in the framework of the EU Task Force on the Recovery of Birds. Source: TFRB 24-11-03.

A careful and thorough analysis of ringing data is required to identify relevant flyways.

In addition, the analysis of ring-recovery to estimate harvest rates could be a useful parameter to explore. Providing existing ringing dataset for Quail allows such analysis.

4. Reliable harvest estimates

Reliable harvest estimates and quick data processing will be required, to ensure smooth implementation of the AHM. The recent increasing use of digital tools to record and centralize information, e.g., phone applications used for the Turtle Dove AHM, is a significant opportunity to optimize this parameter.

The reliability of harvest estimates will require the identification or the estimation of the share of released Quails in the total harvest estimate, as these are not removed from the wild populations. Failing to do so will result in significant overestimation of the impact of harvest, as was already the case in the recent rapid assessment of harvest sustainability.

5. Species ecology

The Quail is a typical r-selected species, relying on productivity as the most important driver of population dynamics (i.e., r-strategists). It has a very low natural adult survival rate (0.34, Bird et al., 2020) and high productivity, with a very early age of first breeding of 8-14 weeks, nesting 2 to 3 and a maximum of 6 times a year, with large clutches (8 to 12 eggs) and producing an average of 4 to 5 fledglings per nest (EU MP[2]). As such, the main driver of population dynamics is productivity, and not survival.

Interesting to harvest management, r-strategist species will be more likely to have fluctuating populations (rather than more stable for long-lived species) and show harvest compensation. Compensatory mortality indicates that individual removed from a given cause of mortality would simply die from other causes, resulting in no change in survival at population level. The Quail could be one of the huntable species for which hunting would have the least impact, up to a certain point. The Quail's ecology indicates that there is no urgency to reduce hunting and extreme care is needed in designing this Adaptive Harvest Management plan to account for this.

Conclusions

As an evidence-based organisation, FACE supports the developments of an AHM plan for the Quail but stresses the crucial need to ensure these points are well accounted for, including ground-truthing of the results, to ensure and smooth implementation of the future adaptive harvest management at international level.

The Quail being a challenging species, given its unusual migration behaviour and high reproductivity, its adaptive harvest management will need to be specially tailored.

While other challenges exist, the points highlighted above constitute some key parameters to take into account in the development of the adaptive harvest management of the Quail. Failing to acknowledge these points could lead to significant issues of the final results and related recommendations towards hunting, which, in turn, might result in limited buy-in from stakeholders. Such results would be counter-productive.

Therefore, FACE strongly recommends that a set of management actions are proposed in the form of regulatory measures triggered by monitoring data (e.g., spring abundance index). The measures could include changes in hunting season length and/or in daily bag limits.

- QUAIL, C. (2009). EUROPEAN UNION MANAGEMENT PLAN 2009-2011. ↑
- BirdLife International. 2021. *Coturnix coturnix (Europe assessment). The IUCN Red List of Threatened Species* 2021: e.T22678944A166185991. https://dx.doi.org/10.2305/IUCN.UK.2021-3.RLTS.T22678944A166185991.en. Accessed on 12 December 2024. ↑