

42 **1. Introduction**

43 The Mediterranean monk seal (*Monachus monachus*) was once widely distributed throughout the
44 Mediterranean, Marmara and Black Seas, as well as along the eastern Atlantic coast of North-West
45 Africa and the Macaronesian archipelagos (1–4). This formerly broad range has contracted
46 severely, and the species is now restricted to a small number of fragmented remnant populations
47 centred in Madeira, Cabo Blanco, and the eastern Mediterranean (5,6). As the only extant member
48 of the genus *Monachus* (7), it is regarded as one of the world’s most threatened pinnipeds and
49 remains of high conservation concern across its entire range (5,8). Its current status reflects a long
50 history of demographic decline, local extirpations, and range fragmentation, all of which continue
51 to shape contemporary conservation priorities (6).

52
53 The decline of the Mediterranean monk seal has been driven primarily by anthropogenic pressures,
54 including persecution, habitat degradation, disturbance at haul-out and pupping sites, fishery
55 interactions, and the broader depletion of coastal marine resources (9,10). Recovery is further
56 constrained by the species’ life-history characteristics, including low reproductive output (11–13),
57 dependence on secure coastal refuges (14–16), and the demographic vulnerability inherent to small
58 and isolated populations (5,6,17). Reduced genetic diversity across the remaining populations adds
59 a further layer of concern (10,18), as it may limit resilience to disease, environmental change, and
60 continuing human disturbance (19). Consequently, conservation of the species requires not only
61 protection of individuals and breeding habitat, but also a clearer understanding of the ecological
62 processes that support survival and population persistence.

63
64 Among these processes, feeding ecology is particularly important. Diet provides direct insight into
65 prey requirements, habitat use, trophic interactions, and the extent to which the species depends
66 on productive coastal ecosystems that are also intensively used by humans. For a predominantly
67 solitary pinniped that forages in nearshore environments (20,21), patterns of prey use are likely to
68 influence not only individual condition and reproductive performance, but also the probability of
69 overlap with fisheries, aquaculture, and other human activities (22). Feeding ecology is therefore
70 central to understanding the mechanisms through which environmental change and anthropogenic
71 pressures may affect population recovery.

72
73 Available evidence indicates that the diet of the Mediterranean monk seal is dominated by fish and
74 cephalopods, with occasional records of other prey, including marine turtles (23,24). However,
75 current knowledge remains uneven in both taxonomic and geographic scope. Much of the
76 published evidence derives from stomach contents of stranded or deceased individuals,
77 supplemented by opportunistic observations and a limited number of indirect approaches such as
78 stable isotope analysis. Although these studies have provided valuable baseline information, they
79 are often based on small sample sizes, restricted locations, and methods that differ in their capacity
80 to detect prey remains and resolve prey identity.

82 These limitations matter because incomplete or biased dietary knowledge can weaken the
83 ecological interpretation of monk seal foraging behaviour and constrain the development of
84 effective management responses. A robust synthesis of the available literature is therefore needed
85 to clarify what is currently known, identify where evidence is strongest, and highlight the principal
86 gaps that remain. Such a review is also timely because diet is increasingly relevant to questions of
87 fishery conflict, habitat protection, prey depletion, and population recovery across the species'
88 fragmented range. This review therefore synthesises the published evidence on the feeding ecology
89 of the Mediterranean monk seal and evaluates its relevance to conservation research and
90 management.

91

92 **2. Methodological Review Approach**

93 Literature searches were initiated in May 2025 and updated through 30 March 2026. Relevant
94 publications were identified using Google Scholar and Web of Science, using search combinations
95 of terms related to the species and its feeding ecology, including “Mediterranean monk seal”,
96 “*Monachus monachus*”, “diet”, “feeding ecology”, “stomach contents”, “scat”, “stable isotope”,
97 and “fatty acid”. Additional records were located through ResearchGate where accessible copies
98 or associated publications could be traced. To maximise coverage of the limited literature available
99 for this species, the reference lists of relevant papers were also examined to identify additional
100 sources through backward snowballing.

101

102 Studies were considered for inclusion if they contained primary or secondary information relevant
103 to diet, prey composition, trophic ecology, foraging behaviour, or methodological approaches used
104 to investigate feeding ecology in the Mediterranean monk seal. Because the evidence base for this
105 species is limited and heterogeneous, a broad range of source types was considered, including
106 peer-reviewed articles, book chapters, conference contributions, theses, and other accessible
107 scientific literature where these provided original or otherwise informative dietary data. Each
108 retrieved source was screened for relevance on the basis of title, abstract, and, where necessary,
109 full text.

110

111 Information extracted from each source included study location, evidence type, dietary method,
112 and the principal findings relating to prey use or feeding ecology. The literature was synthesised
113 narratively rather than quantitatively, as the available studies differed substantially in design,
114 sample type, analytical approach, and taxonomic resolution. Particular attention was given to the
115 strengths and limitations of the different dietary methods represented in the literature.

116

117 To complement literature searches, we also reviewed publicly available online sources, including
118 photographs and videos, documenting Mediterranean monk seal (*Monachus monachus*) feeding
119 behaviour in the Madeira archipelago. Only records in which prey items could be confidently
120 identified to the lowest possible taxonomic level were considered. These visual records were used

121 as supplementary qualitative evidence of prey consumption and to support the occurrence of
122 selected taxa identified through other analytical approaches.

123

124 **3. Approaches Used to Investigate Diet**

125 *3.1 Stomach content analysis*

126 Stomach content analysis has provided the most direct evidence available on the diet of the
127 Mediterranean monk seal and remains the principal source of prey-specific information for the
128 species (Figure1). Because this approach is based on the examination of ingested material
129 recovered from dead or stranded individuals, it allows relatively confident identification of
130 recently consumed prey and has been especially valuable in documenting the importance of fish
131 and cephalopods in the diet (25–27). Available stomach content-based studies from the eastern
132 Mediterranean and North-West Africa indicate that monk seals consume a broad range of coastal
133 and demersal prey, with fish and cephalopods consistently dominating reported diet composition
134 (26). Rare records of other prey, including marine turtles (23,24), further suggest that
135 Mediterranean monk seals are capable of opportunistic predation, although such prey appear to
136 represent exceptional rather than typical dietary items.

137

138 **Figure 1.** Pathways through which diet and feeding ecology have been inferred in the
139 Mediterranean monk seal (*Monachus monachus*).

140

141 Despite its value, stomach content analysis has several important limitations that must be
142 considered when interpreting the dietary ecology of this species. Evidence is typically derived
143 from a small number of stranded, injured, or otherwise compromised individuals, which introduces
144 unavoidable bias in terms of age class, health status, season, and locality (28–31). Soft-bodied prey
145 may be under-represented relative to prey with more persistent hard parts (32,33), and the method
146 provides only a short-term snapshot of recent feeding rather than an integrated view of diet over
147 time. Consequently, stomach contents remain indispensable for prey identification, but they cannot
148 on their own provide a complete or unbiased picture of population-level foraging ecology.

149

150 *3.2 Scat-based approaches*

151 Scat-based approaches have clear value in dietary studies because they offer a non-lethal and
152 potentially repeatable means of investigating prey use, particularly where fresh samples can be
153 collected from haul-out or resting sites (15,34,35). In principle, scat analysis may allow
154 identification of prey remains such as bones, otoliths, vertebrae, cartilage, or cephalopod beaks,
155 thereby complementing the information obtained from stomach contents (31,36). For
156 Mediterranean monk seals, however, the published evidence located in this review indicates that
157 visual scat-based dietary work remains limited, and this method has not yet contributed
158 substantially to the species-specific diet literature when compared with stomach content studies.
159 As a result, its potential is greater than its current empirical contribution within the available
160 evidence base. Scata have also been used for profiling monk seals gut microbiome (37).

161
162 Interpretation of scat data in pinnipeds also requires caution. Differential digestion, loss or
163 regurgitation of hard parts, and the variable detectability of prey remains can all influence prey
164 recovery and bias estimates of diet composition (38). These constraints are well recognised in the
165 broader marine mammal diet literature and are directly relevant to Mediterranean monk seals, for
166 which sample availability is already limited. Although molecular methods applied to scats,
167 including DNA metabarcoding (39), have transformed dietary studies in other pinniped species
168 (40,41), the literature assembled here suggests that these approaches remain largely prospective
169 rather than established for *M. monachus*.

170 171 *3.3 Stable isotope analysis*

172 Stable isotope analysis has provided an important complementary perspective on Mediterranean
173 monk seal feeding ecology by moving beyond the short-term prey signal captured by stomach
174 contents. In contrast to direct diet methods, stable isotopes reflect assimilated diet over a longer
175 period and can therefore provide broader insight into trophic position and foraging habitat (42,43).
176 The principal isotope study identified for this species supports a predominantly coastal feeding
177 strategy, with foraging linked mainly to shallow, nearshore and benthic-associated habitats. This
178 is ecologically consistent with the species' distribution, behaviour, and known reliance on coastal
179 environments throughout its remaining range.

180
181 At the same time, the interpretive strength of stable isotope analysis lies more in trophic ecology
182 than in precise prey identification. Carbon isotope ratios are useful for distinguishing broad habitat
183 sources, whereas nitrogen isotope ratios help infer relative trophic level, but neither provides prey
184 identity at species level without additional complementary evidence (42,44). For Mediterranean
185 monk seals, stable isotopes therefore strengthen inferences about general foraging strategy,
186 especially the importance of coastal feeding, but they do not replace direct dietary data. Their
187 greatest value lies in integration with stomach contents, prey ecology, and spatial information to
188 produce a more coherent picture of habitat-linked diet.

189 190 *3.4 Fatty acid approaches and future potential*

191 Quantitative fatty acid signature analysis (QFASA) has not yet emerged as a core method in the
192 published dietary literature of the Mediterranean monk seal, but it warrants consideration as a
193 potentially valuable avenue for future research. In other pinnipeds, including the Hawaiian monk
194 seal (*Monachus schauinslandi*; (45)) and grey seal (*Halichoerus grypus*; (46)), fatty acid
195 approaches have been used to estimate assimilated diet over medium to longer time scales and to
196 evaluate the proportional contribution of prey groups to predator nutrition (47). These methods are
197 particularly attractive because they provide information that is difficult to obtain from
198 opportunistic stomach samples alone, especially for rare or difficult-to-study species. Within the
199 context of Mediterranean monk seal research, however, the evidence identified in this review

200 indicates that QFASA is currently better regarded as a methodological opportunity than as an
201 established source of species-specific dietary knowledge.

202
203 Any future application of fatty acid methods to Mediterranean monk seals would need to address
204 several practical and analytical constraints. These include the need for suitable blubber sampling,
205 robust prey reference libraries, calibration coefficients appropriate to the species, and careful
206 treatment of uncertainty arising from blubber stratification and model structure (48–50). Such
207 requirements are substantial, particularly for a rare and legally protected species, but the potential
208 conservation value could be considerable if these challenges were overcome. In combination with
209 direct diet methods and stable isotope data, fatty acid approaches could help resolve longer-term
210 prey use, strengthen trophic inference, and improve understanding of how foraging ecology varies
211 across the species' fragmented populations.

212 213 **4. Dietary Composition**

214 *4.1 Overview of reported diet items*

215 The reported diet items of the Mediterranean monk seal compiled from the available literature are
216 summarised in Table 1, which integrates evidence from stomach-content studies, direct
217 observations, and a limited number of mixed-evidence sources. Across its range, the species has
218 consistently been described as a predator with a broad but unevenly documented diet composed
219 mainly of bony fishes and cephalopods (38,51), with less frequent records of crustaceans (38),
220 cartilaginous fishes (38), seaweeds, and marine turtles (23,24,52–54). The strongest primary
221 evidence remains geographically concentrated in the eastern Mediterranean, particularly Greece
222 (38,42) and Turkey (23), although additional dietary information is available from Madeira and
223 the Desertas Islands (39), Mauritanian waters (27), Albania (15), and, more recently, observational
224 records from Lebanon (55). Taken together, the available literature supports the interpretation that
225 the Mediterranean monk seal is a generalist coastal predator whose diet reflects both local prey
226 availability and the limitations of an opportunistic evidence base.

227
228 **Table 1.** Reported diet items of the Mediterranean monk seal (*Monachus monachus*), excluding
229 items considered incidental ingesta.

230 231 *4.2 Fish*

232 Fish constitute the broadest and most taxonomically diverse component of the reported diet of the
233 Mediterranean monk seal. In the largest stomach-content study available (25), based on 27
234 carcasses collected from the Greek coast between 1997 and 2008, 530 prey items representing at
235 least 71 prey species were identified, of which 253 items were fish (48%). Approximately 74% of
236 all prey in that study could be identified at least to genus level, indicating high taxonomic
237 resolution for much of the fish component (25). Reported teleost prey span a wide ecological range,
238 including anguilliformes congers, sparids, mugilids, scorpionfishes, flatfishes, goatfishes, wrasses,
239 mackerels, and other demersal, benthic, reef-associated, and schooling coastal taxa (Table 1). This

240 breadth reiterates that Mediterranean monk seals do not rely on a narrow prey spectrum, but instead
241 exploit a wide variety of fishes associated with productive shallow-water habitats.

242
243

244 Within this fish-dominated component, sparids appear repeatedly across the literature and seem to
245 be particularly important. Karamanlidis et al. note that bony fish, especially sparids, are
246 characteristic prey throughout the species' range, while the Greek dataset included numerous
247 seabream-like taxa and several other commercially important coastal species. Additional evidence
248 from Albania identified gilthead sea bream, European sea bass, and garfish in monk seal scat,
249 further reinforcing the importance of coastal teleost prey. The recurrent occurrence of seabass,
250 seabreams, mullets, meagre, and other nearshore fishes is ecologically important because it implies
251 regular overlap between monk seal foraging grounds and areas used by artisanal fisheries and, in
252 some regions, aquaculture.

253

254 *4.3 Cephalopods and other invertebrates*

255 Cephalopods are the second major dietary component and, in some studies, appear to rival or
256 exceed fish in numerical importance. In the Greek stomach-content dataset, 266 cephalopod prey
257 items were identified, comprising 50% of all prey recovered, and the common octopus (*Octopus*
258 *vulgaris*) alone accounted for 33.9% of prey by number. Likewise, the Turkish stomach-content
259 study of two monk seals found that cephalopods constituted 94.01% of prey biomass, showing that
260 they can dominate individual diets. Across the broader literature, octopuses, cuttlefish, and squids
261 recur repeatedly, with *Octopus vulgaris*, *Eledone* spp., *Loligo vulgaris*, and *Sepia officinalis*
262 among the most frequently reported taxa, indicating regular exploitation of benthic as well as more
263 mobile nektonic prey.

264

265 Other invertebrates have been recorded far less frequently and appear to make only a minor
266 contribution to the documented diet. Crustaceans such as crabs and penaeid shrimps are present in
267 the Greek material, but at low frequency relative to fishes and cephalopods. Non-cephalopod
268 molluscs are also occasionally reported, although their trophic importance remains unclear.
269 Overall, the literature indicates that Mediterranean monk seal feeding ecology is centred on fish
270 and cephalopods, while other invertebrates are either supplementary, opportunistically taken, or
271 under-represented because of potential methodological bias.

272

273 *4.4 Occasional and atypical prey*

274 In addition to its main fish- and cephalopod-based diet, the Mediterranean monk seal occasionally
275 consumes less typical prey. Greek stomach-content analyses recorded batoids and catsharks, but
276 these occurred at much lower frequencies than teleost fishes and cephalopods (38,39,56). Marine
277 turtles are also documented in the literature, although such cases are likely exceptional rather than
278 representative of the species' routine diet. Green turtle remains were reported from the stomach of
279 a stranded monk seal in Türkiye, and subsequent work from the Turkish coast provided further

280 evidence of monk seal predation on green turtles; loggerhead turtle predation has likewise been
281 inferred from wound patterns and stranding events in the eastern Mediterranean.

282

283 These unusual prey records should be interpreted cautiously. They do not indicate dietary
284 specialisation on large vertebrates, but rather reinforce the view that Mediterranean monk seals are
285 opportunistic predators capable of exploiting vulnerable or locally available prey when
286 circumstances permit. At the same time, some items recovered from stomach contents, such as
287 sponge and benthic vegetation (15), are more plausibly interpreted as incidental ingesta than as
288 true prey and should not be used to define the species' trophic niche. For that reason, occasional
289 and atypical records are informative, but they should remain clearly distinguished from the
290 dominant dietary signal provided by fishes and cephalopods.

291

292 **5. Dietary variation and feeding ecology**

293 *5.1 Ontogenetic variation*

294 Available evidence suggests that the diet of the Mediterranean monk seal varies across life stages,
295 although direct data remain limited. Pups are nursed for several months and transition gradually to
296 independent foraging rather than undergoing an abrupt shift in feeding behaviour. The only
297 focused study of a post-weaning individual reported a transitional diet dominated by cephalopods
298 and congrid, which suggests that newly independent juveniles may initially target prey that are
299 relatively easy to capture and handle. Although this evidence is based on a single individual and
300 should therefore be interpreted cautiously, it indicates that early independent foraging may be
301 narrower and less fish-dominated than the broader adult diet described from larger stomach-
302 content datasets.

303

304 *5.2 Regional variation*

305 Geographic variation is also evident, although it is expressed more clearly in prey composition
306 than in broad trophic pattern. Studies from Greece and Türkiye consistently report a mixed diet
307 dominated by teleost fishes and cephalopods, whereas direct observations from Madeira and the
308 Desertas Islands emphasise nearshore coastal fishes and cuttlefish. Evidence from Mauritanian
309 waters similarly supports a heterogeneous diet comprising both teleost prey and cephalopods.
310 More recent records from Albania and Lebanon extend this pattern to other parts of the species'
311 range and continue to indicate reliance on shallow-water coastal prey, including seabreams,
312 seabass, mullets, garfish, octopus, and related taxa. Across regions, the strongest common signal
313 is therefore not dietary specialisation on a single prey type, but repeated use of locally available
314 coastal and benthic resources.

315

316 *5.3 Feeding ecology*

317 Stable isotope evidence complements the prey records by indicating that Mediterranean monk
318 seals in Greece rely predominantly on coastal food webs and forage largely in nearshore and
319 seabed-associated habitats. This habitat-linked signal helps explain why prey assemblages differ

320 among regions: variation in habitat structure, prey communities, and local fishing pressure is likely
321 to influence the prey most frequently encountered and consumed. At the same time, apparent
322 differences among studies should not be over-interpreted, because the evidence base remains
323 small, geographically uneven, and methodologically heterogeneous. Some studies are based on
324 stranded animals, whereas others rely on direct observations or opportunistic samples, and these
325 approaches differ substantially in taxonomic resolution and temporal integration.

326

327 Overall, the available evidence supports the view that the Mediterranean monk seal is a flexible
328 coastal predator whose diet varies with life stage, locality, and prey availability rather than
329 adhering to a fixed trophic profile. Fish and cephalopods remain the dominant prey groups across
330 all regions for which data are available, but the relative importance of particular taxa appears to
331 shift according to local ecological conditions and, in some cases, the type of evidence collected.
332 Rare records of turtles and other atypical prey are best regarded as exceptional expressions of
333 opportunism rather than as representative components of the diet. A more resolved understanding
334 of dietary variation will require broader geographic coverage and wider application of non-lethal
335 dietary methods that can be compared across populations and age classes.

336

337 **6. Methodological limitations and future directions**

338 Current understanding of the feeding ecology of the Mediterranean monk seal remains constrained
339 by the small size and uneven nature of the available evidence base. Most dietary information
340 derives from stomach contents of stranded or dead individuals, supplemented by a limited number
341 of direct observations and a small amount of indirect evidence. This creates clear limitations in
342 geographic coverage, sample size, age-class representation, and temporal resolution, and means
343 that apparent differences among studies may reflect sampling bias as much as true ecological
344 variation. In addition, stomach-content and hard-part analyses are inherently selective, as prey with
345 durable remains are more likely to be detected than soft-bodied prey, while direct observations
346 tend to capture unusual or conspicuous feeding events rather than routine diet.

347

348 These constraints are well recognised in pinniped dietary research more broadly, where no single
349 method is considered sufficient on its own. Stable isotope analysis can help resolve broader trophic
350 patterns and habitat-linked foraging, but it does not provide prey identity at fine taxonomic
351 resolution. For Mediterranean monk seals, the most important priority is therefore not simply the
352 adoption of new methods, but the development of a more consistent multi-method framework. In
353 particular, non-lethal scat sampling combined with DNA metabarcoding offers strong potential to
354 improve prey detection and expand sampling across populations (39), while stable isotopes and
355 other complementary approaches could strengthen interpretation of habitat use and trophic
356 variation. Future progress will depend on broader geographic coverage, standardised sampling,
357 and the integration of complementary dietary methods across the species' remaining populations.
358 Such an approach would allow clearer distinction between genuine ecological variation and

359 artefacts of sparse or opportunistic sampling, and would provide a stronger basis for understanding
360 fisheries overlap, prey use, and the conservation needs of this endangered pinniped.

361

362 **7. Conservation implications**

363 Understanding the feeding ecology of the Mediterranean monk seal is directly relevant to
364 conservation because it clarifies the ecological conditions required to support the species across
365 its fragmented range. The available evidence indicates consistent reliance on coastal fish and
366 cephalopod resources, linking monk seal persistence to the condition and productivity of shallow
367 nearshore habitats. Protecting breeding caves alone is therefore insufficient if the surrounding
368 foraging grounds are degraded, overexploited, or subject to chronic disturbance. Conservation
369 planning should instead recognise that breeding habitat, resting habitat, and feeding habitat form
370 an integrated ecological unit (22).

371

372 Dietary evidence also highlights the potential for overlap with fisheries and, in some areas,
373 aquaculture. Many of the reported prey taxa are commercially important coastal species, including
374 seabreams, mullets, seabass, and meagre, all of which are also targeted by artisanal and small-scale
375 fisheries. This overlap increases the likelihood of negative interactions, including entanglement,
376 retaliatory killing, and the exclusion of seals from preferred foraging areas. As a result,
377 management actions aimed at reducing conflict should be informed not only by records of seal
378 presence, but also by a clearer understanding of prey use, fishing effort, and the spatial distribution
379 of key feeding habitats. The available literature further suggests that prey depletion may represent
380 an underappreciated constraint on recovery. In small and isolated populations, even modest
381 reductions in prey availability may have disproportionate consequences for body condition,
382 juvenile survival, and reproductive performance (57). This is especially important for a species
383 with low reproductive output and limited demographic resilience. From a conservation
384 perspective, dietary ecology should therefore be incorporated into population recovery planning,
385 habitat protection, and fishery management, particularly in regions where monk seals persist in
386 close proximity to human activity.

387

388 More broadly, the fragmented distribution of the Mediterranean monk seal means that conservation
389 measures are unlikely to be equally effective across all populations. Differences in prey
390 communities, habitat structure, and fishing pressure may influence local foraging opportunities
391 and the severity of human–seal interactions. Consequently, future recovery efforts would benefit
392 from region-specific assessments of feeding ecology that identify the prey resources and habitats
393 most important to each population. Strengthening this ecological understanding will improve the
394 design of marine protected areas, support more targeted mitigation of fishery conflict, and help
395 ensure that conservation measures address not only where monk seals breed and rest, but also
396 where and on what they depend to survive.

397

398 **8. Conclusions**

399 This review shows that the Mediterranean monk seal is a flexible coastal predator whose diet is
400 dominated by bony fishes and cephalopods, with occasional records of other prey reflecting
401 opportunistic foraging rather than dietary specialisation. At the same time, the current evidence
402 base remains limited, geographically uneven, and strongly shaped by opportunistic sampling, with
403 most information derived from stomach contents of stranded or deceased individuals. Despite these
404 constraints, the available literature consistently indicates that feeding ecology is central to
405 understanding monk seal habitat use, fishery interactions, and the ecological factors that may
406 influence recovery across the species' fragmented range. Future progress will depend on broader
407 geographic coverage and the use of more consistent, non-lethal, and complementary dietary
408 methods. Improving knowledge of prey use and foraging ecology will not only refine
409 understanding of the species' trophic role, but will also provide a stronger basis for conservation
410 planning and long-term population recovery.

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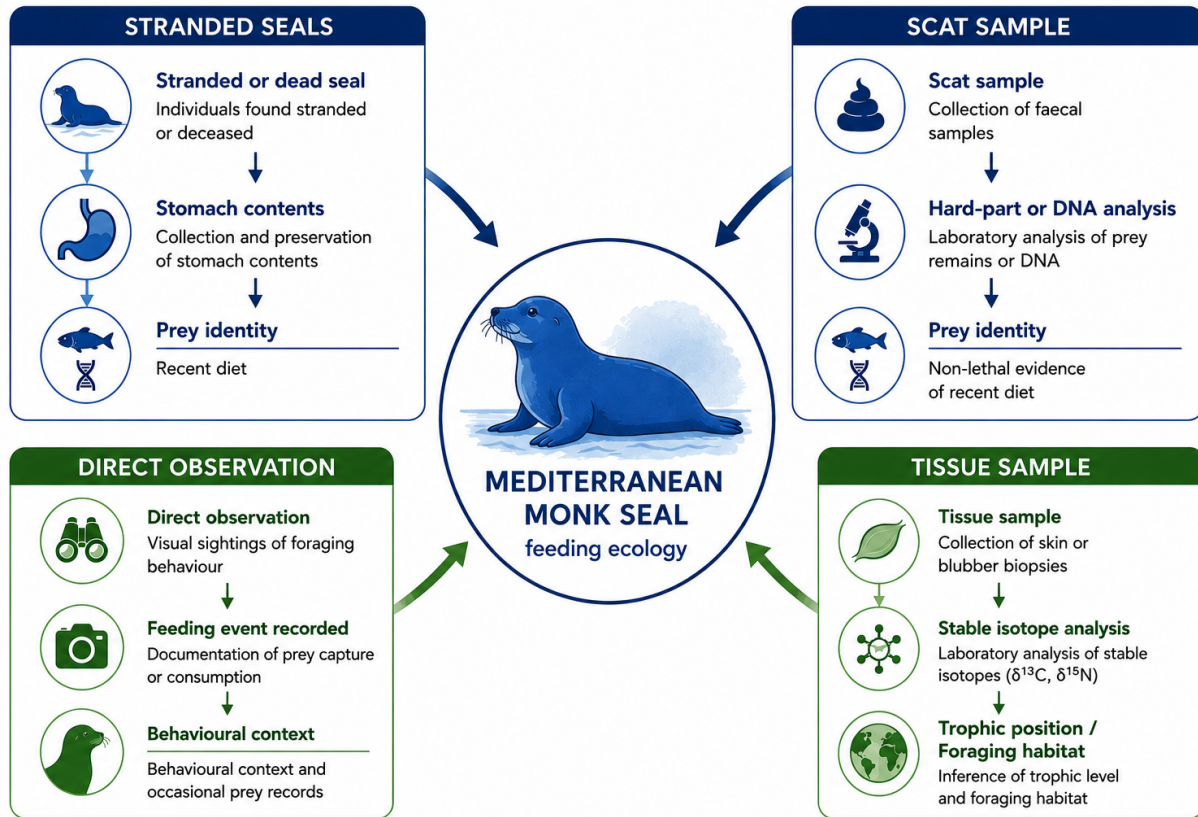
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612 **Figures**

613

614 Figure 1. Pathways through which diet and feeding ecology have been inferred in the
615 Mediterranean monk seal (*Monachus monachus*).
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Scientific name	Common name	Evidence type	Reference(s)
Osteichthyes			
<i>Anguilliformes</i>	Eels	Stomach content	Pierce et al. 2011
<i>Ariosoma balearicum</i>	Bandtooth conger	Stomach content	Tonay et al. 2016; Kıraç & Ok 2019
<i>Argyrosomus regius</i>	Meagre	Stomach content	Pierce et al. 2011; Karamanlidis et al. 2011; Tonay et al. 2016
<i>Arnoglossus</i> spp.	Scaldfishes	Stomach content	Pierce et al. 2011
<i>Atherina hepsetus</i>	Mediterranean sand smelt	Stomach content	Pierce et al. 2011
<i>Balistes capriscus</i>	Grey triggerfish	Direct observation	Pires 2020
<i>Belone belone</i>	Garfish	Scat analysis	Bundone et al. 2022
<i>Bodianus scrofa</i>	Barred hogfish	Direct observation	Neves 1998; Neves & Pires 1999
<i>Boops boops</i>	Bogue	Stomach content	Pierce et al. 2011; Cebrian et al. 1990
<i>Citharus linguatula</i>	Spotted flounder	Stomach content	Pierce et al. 2011
<i>Coris julis</i>	Mediterranean rainbow wrasse	Stomach content	Pierce et al. 2011
<i>Conger conger</i>	Conger eel	Direct observations; Photograph	Karamanlidis et al. 2011; Pires 2020; Current study
<i>Dicentrarchus labrax</i>	European seabass	Stomach content; Scat analysis	Pierce et al. 2011; Bundone et al. 2022
<i>Diplodus annularis</i>	Annular seabream	Stomach content	Pierce et al. 2011; Hernández-Milián et al. 2018
<i>Diplodus</i> sp.	Seabream	Mixed evidence	Pierce et al. 2011; Pires 2020
<i>Diplodus vulgaris</i>	Two-banded seabream	Stomach content	Karamanlidis et al. 2011; Cebrian et al. 1990
<i>Engraulis encrasicolus</i>	European anchovy	Stomach content	Cebrian et al. 1990
<i>Gobius bucchichi</i>	Bucchich's goby	Stomach content	Pierce et al. 2011
<i>Gobius</i> spp.	Gobies	Stomach content	Pierce et al. 2011
<i>Lithognathus mormyrus</i>	Sand steenbras	Stomach content	Pierce et al. 2011
<i>Chelon auratus</i>	Golden grey mullet	Direct observation	Neves 1998; Neves & Pires 1999

<i>Lophius</i> spp.	Monkfishes	Stomach content	Pierce et al. 2011; Cebrian et al. 1990
<i>Merluccius merluccius</i>	European hake	Stomach content	Pierce et al. 2011
<i>Mullus</i> spp.	Goatfishes	Stomach content	Pierce et al. 2011; Cebrian et al. 1990
<i>Muraena augusti</i>	Black moray	Direct observation	Pires 2020
<i>Muraena helena</i>	Mediterranean moray	Stomach content	Pierce et al. 2011
<i>Mugil cephalus</i>	Flathead grey mullet	Stomach content	Cebrian et al. 1990
<i>Oblada melanura</i>	Saddled seabream	Stomach content	Pierce et al. 2011; Cebrian et al. 1990
<i>Pagellus acarne</i>	Spanish seabream	Stomach content	Pierce et al. 2011; Tonay et al. 2016
<i>Pagellus bogaraveo</i>	Blackspot seabream	Stomach content	Pierce et al. 2011
<i>Pagellus</i> spp.	Seabreams	Stomach content	Pierce et al. 2011; Tonay et al. 2016
<i>Pagellus erythrinus</i>	Common pandora	Stomach content	Karamanlidis et al. 2011; Tonay et al. 2016
<i>Pagrus pagrus</i>	Red porgy	Stomach content; Photography	Maul 1957, unpublished data; Pierce et al. 2011, Current study
<i>Phycis blennoides</i>	Greater forkbeard	Stomach content	Pierce et al. 2011
<i>Phycis phycis</i>	Forkbeard	Stomach content	Pierce et al. 2011
<i>Platichthys flesus</i>	European flounder	Stomach content	Cebrian et al. 1990
<i>Plectorhinchus mediterraneus</i>	Rubberlip grunt	Mixed evidence	Hernández-Milián et al. 2018
<i>Pleuronectes platessa</i>	European plaice	Stomach content	Cebrian et al. 1990
<i>Pseudotolithus</i> sp.	Croaker	Mixed evidence	Hernández-Milián et al. 2018
<i>Sardina pilchardus</i>	European sardine	Mixed evidence	Cebrian et al. 1990
<i>Sarpa salpa</i>	Salema porgy	Mixed evidence	Neves 1998; Neves & Pires 1999; Pires 2020; Karamanlidis et al. 2011
<i>Scomber colias</i>	Atlantic chub mackerel	Stomach content	Pires 2020; Cebrian et al. 1990
<i>Scomber scombrus</i>	Atlantic mackerel	Stomach content	Cebrian et al. 1990
<i>Scorpaena porcus</i>	Black scorpionfish	Stomach content	Pierce et al. 2011; Karamanlidis et al. 2011
<i>Scorpaena scrofa</i>	Red scorpionfish	Stomach content	Pierce et al. 2011
<i>Scorpaena</i> spp.	Scorpionfishes	Stomach content	Pierce et al. 2011
<i>Serranus hepatus</i>	Brown comber	Stomach content	Pierce et al. 2011

<i>Serranus</i> spp.	Sea basses / serranids	Stomach content	Pierce et al. 2011; Cebrian et al. 1990
<i>Sparisoma cretense</i>	Mediterranean parrotfish	Mixed evidence	Neves 1998; Neves & Pires 1999; Pires 2020; Pierce et al. 2011
<i>Sparus aurata</i>	Gilthead seabream	Mixed evidence	Pires 2020; Muñoz-Cañas et al. 2012
<i>Spicara flexuosa</i>	Picarel	Stomach content	Pierce et al. 2011
<i>Spicara maena</i>	Blotched picarel	Stomach content	Pierce et al. 2011
<i>Spicara</i> spp.	Picarels	Stomach content	Pierce et al. 2011
<i>Spondyliosoma cantharus</i>	Black seabream	Stomach content	Pierce et al. 2011
<i>Sphyraena sphyraena</i>	European barracuda	Stomach content	Pietroluongo et al. 2019
<i>Synapturichthys kleinii</i>	Klein's sole	Stomach content	Pierce et al. 2011
<i>Synodus saurus</i>	Atlantic lizardfish	Stomach content	Pietroluongo et al. 2019
<i>Symphodus tinca</i>	Peacock wrasse	Stomach content	Karamanlidis et al. 2011
<i>Trachinotus ovatus</i>	Pompano	Direct observation	Pires 2020
<i>Trachurus</i> sp.	Jack mackerel	Stomach content	Maul 1957, unpublished data; Pires 2020; Pierce et al. 2011
<i>Trachurus</i> spp.	Horse mackerels	Stomach content	Pierce et al. 2011
Trichiuridae	Cutlassfishes	Stomach content	Pierce et al. 2011
Triglidae	Sea robins	Stomach content	Cebrian et al. 1990
<i>Dentex dentex</i>	Common dentex	Stomach content	Cebrian et al. 1990; Tonay et al. 2016
<i>Dentex maroccanus</i>	Morocco dentex	Stomach content	Tonay et al. 2016
Chondrichthyes			
Batoidea	Batooids	Stomach content	Pierce et al. 2011
Rajidae sp.	Skate	Stomach content; Direct observations; Photograph	Maul 1957, unpublished data; Pires 2020; Current study
<i>Scyliorhinus</i> spp.	Catsharks	Stomach content	Pierce et al. 2011
Crustacea			
Brachyura	True crabs	Stomach content	Pierce et al. 2011
Penaeidae	Penaeid shrimps	Stomach content	Pierce et al. 2011
Mollusca			
<i>Eledone cirrhosa</i>	Horned octopus	Stomach content	Pierce et al. 2011

<i>Eledone moschata</i>	Musky octopus	Stomach content	Pierce et al. 2011; Salman et al. 2001
<i>Eledone</i> sp.	Octopus	Stomach content; Direct observations	Pires 2020; Muñoz-Cañas et al. 2012
<i>Loligo</i> sp.	Squid	Stomach content	Pires 2020
<i>Loligo vulgaris</i>	European squid	Stomach content	Karamanlidis et al. 2011; Pierce et al. 2011
<i>Octopus vulgaris</i>	Common octopus	Stomach content	Pierce et al. 2011; Karamanlidis et al. 2011; Muñoz-Cañas et al. 2012; Kıraç & Ok 2019
<i>Octopus</i> sp.	Octopus	Video recording	Fatfat et al. 2026
Ommastrephidae	Flying squids	Stomach content	Pierce et al. 2011
<i>Sepia officinalis</i>	Common cuttlefish	Mixed evidence	Neves 1998; Neves & Pires 1999; Pires 2020; Salman et al. 2001
<i>Bathypolypus sponsalis</i>	Globose octopus	Stomach content	Salman et al. 2001
Bivalvia	Bivalves	Stomach content	Pierce et al. 2011
Gastropoda	Gastropods / snails	Stomach content	Pierce et al. 2011
<i>Haliotis</i> spp.	Abalones	Stomach content	Pierce et al. 2011
Pectinidae	Scallops	Stomach content	Pierce et al. 2011
Veneridae	Venus clams	Stomach content	Pierce et al. 2011
Teuthida	Squids	Stomach content	Pierce et al. 2011
Testudines			
<i>Chelonia mydas</i>	Green turtle	Mixed evidence	Tonay et al. 2016; Kıraç & Türkozan 2023
<i>Caretta caretta</i>	Loggerhead turtle	Direct observation	Margaritoulis et al. 1996; Margaritoulis & Touliatou 2011; Snape et al. 2022

