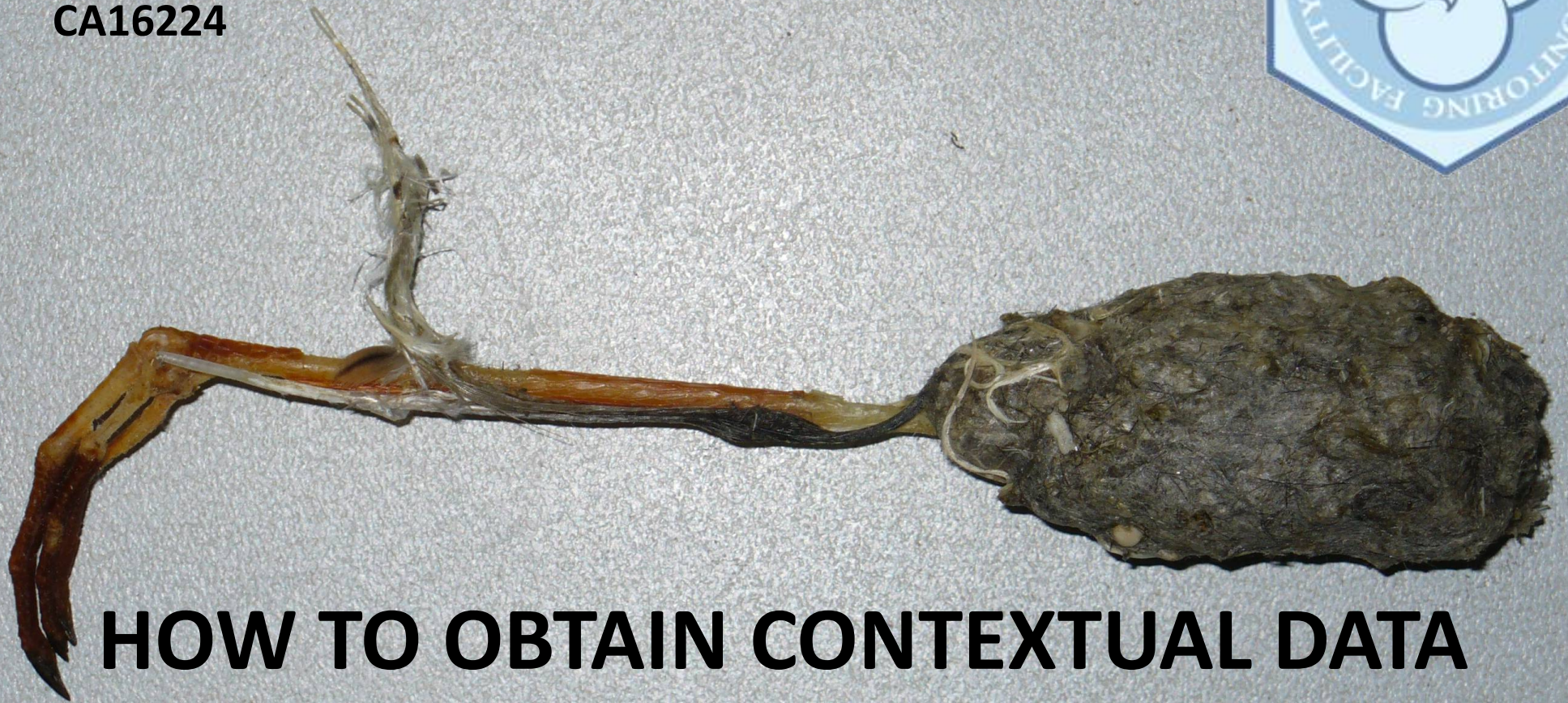




ERBFacility
CA16224

ADVICE HUB

HOW TO MONITOR RAPTORS



HOW TO OBTAIN CONTEXTUAL DATA ON THE DIET OF RAPTORS

WG4 & cross-WG Virtual Meeting, 22 April 2021

Taking forward a European raptor sampling programme & the ERBF Advice Hub

Rui Lourenço, University of Évora, Portugal

ADVICE HUB

HOW TO MONITOR RAPTORS

How to obtain contextual data on the diet of raptors

OBJECTIVES OF THIS SECTION OF THE ADVICE HUB:

- A) List the methods used to study the diet of raptors and their advantages and disadvantages (taking into consideration species/groups)**
- B) Indicate the parameters used to describe the diet of raptors that are most relevant for ecotoxicological studies**
- C) Provide references to relevant scientific articles and books on diet studies**
- D) Provide links to webpages with useful information**

ADVICE HUB

HOW TO MONITOR RAPTORS

How to obtain contextual data on the diet of raptors

CONTENTS OF THIS SECTION

A) Main methods used to study the diet of raptors

Advantages/disadvantages; species/groups for which it is used

B) Main parameters used to describe the diet of raptors

Quantification parameters; diet diversification measurements

C) References to scientific articles and books

Method description; method comparison; prey identification

D) Links to webpages

HOW TO OBTAIN CONTEXTUAL DATA ON THE DIET OF RAPTORS

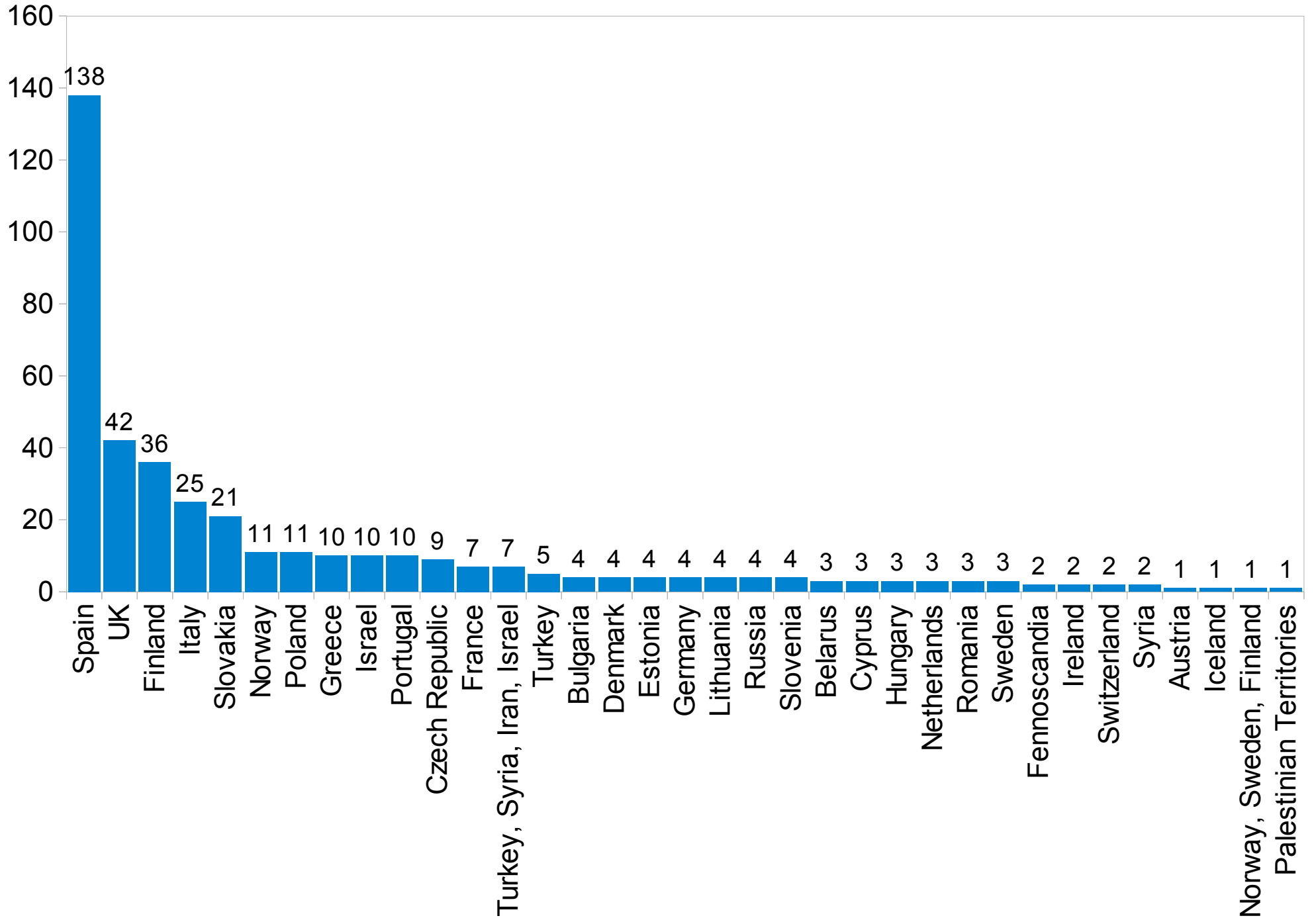
APPROACH TAKEN:

- **LITERATURE REVIEW:** 292 published papers on the diet of European raptors
- **DATASET:** 401 entries – raptor species / diet study method
- **49 SPECIES (separated in 5 groups):**
 - A) **Vultures:** 4 species
 - B) **Large eagles:** 7 species
 - C) **Small to medium sized raptors** (eagles, kites, hawks, harriers): 15 species
 - D) **Falcons:** 8 species
 - E) **Owls:** 15 species

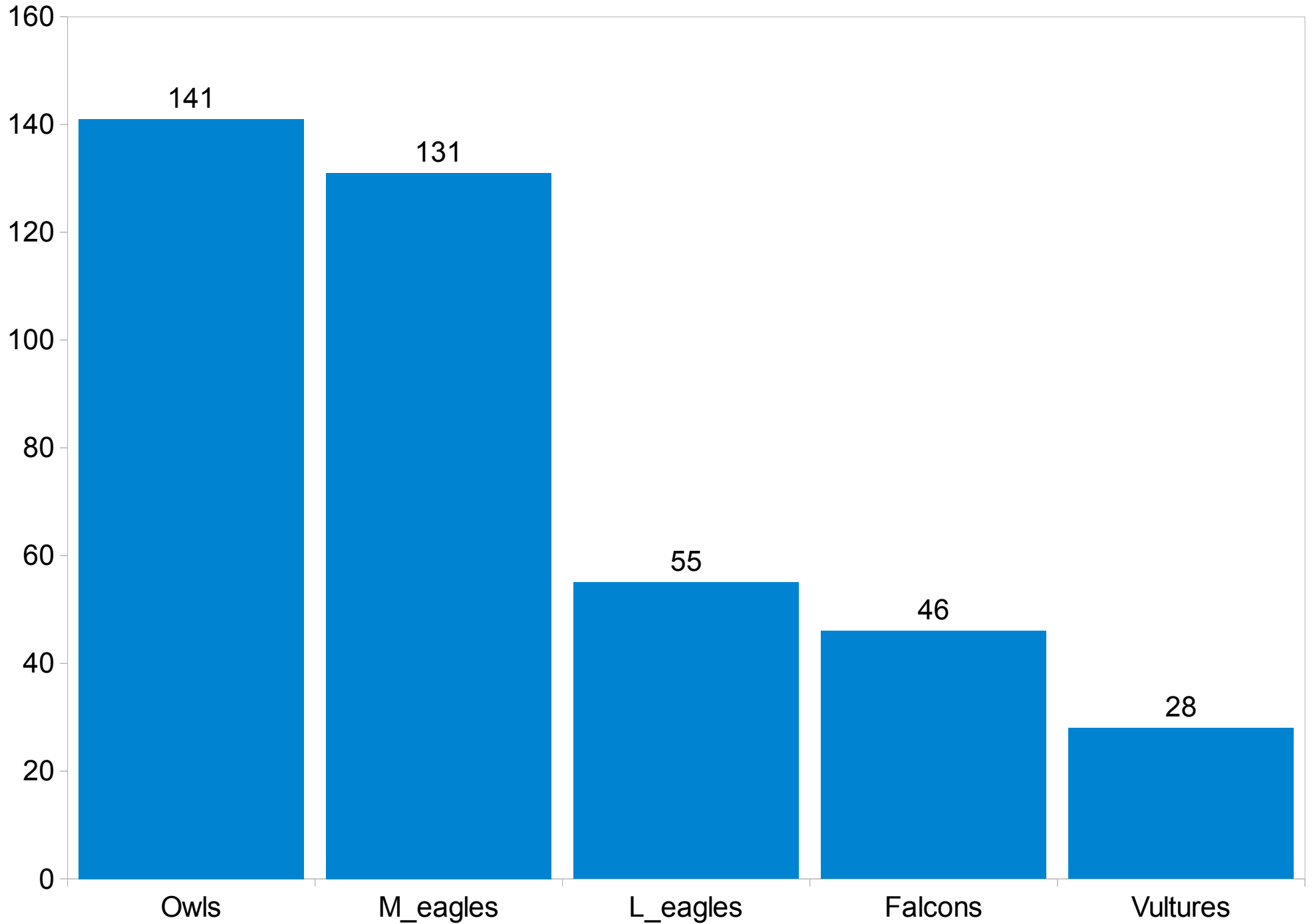
1. DATASET CHARACTERIZATION



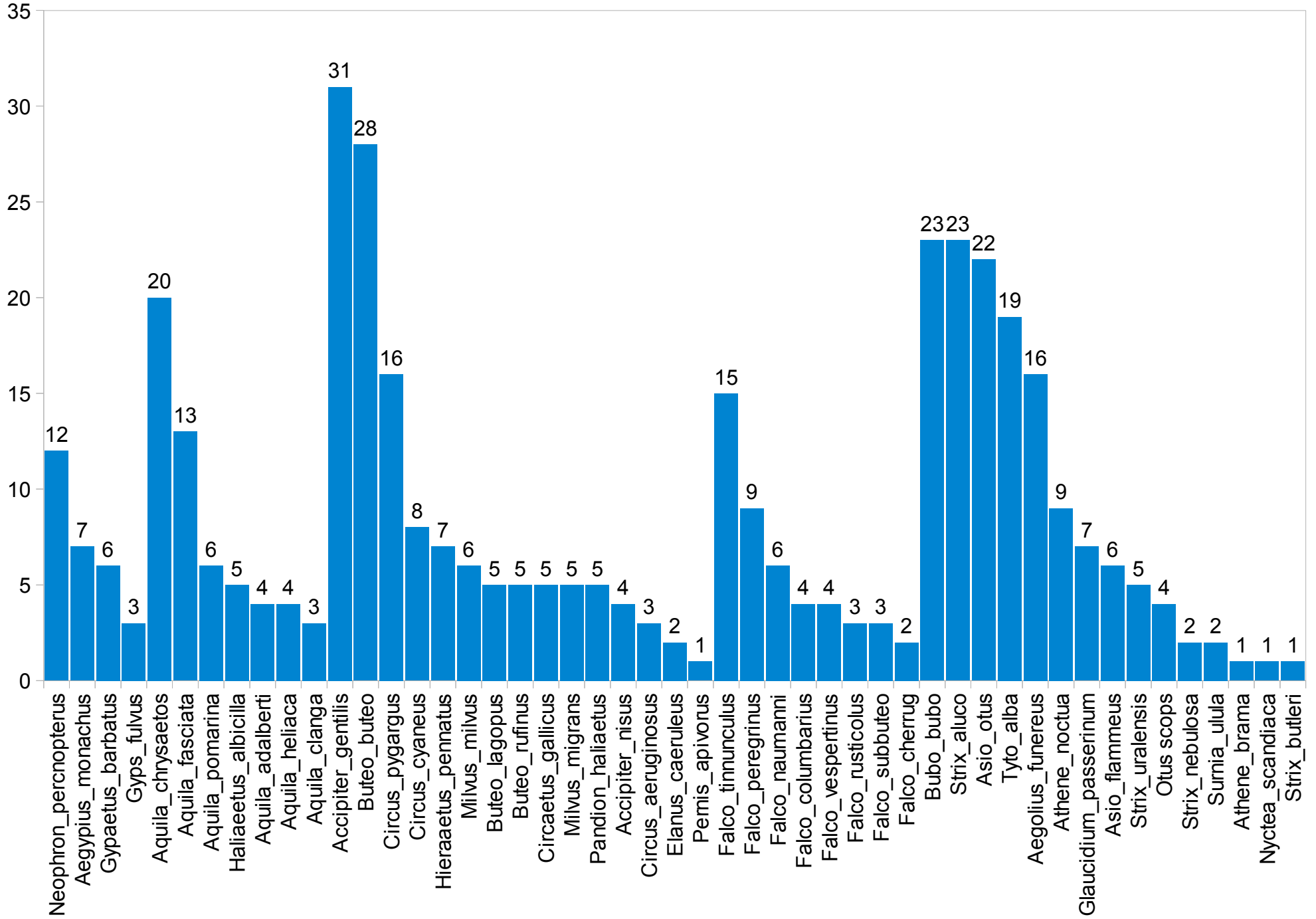
COUNTRY REPRESENTATIVENESS



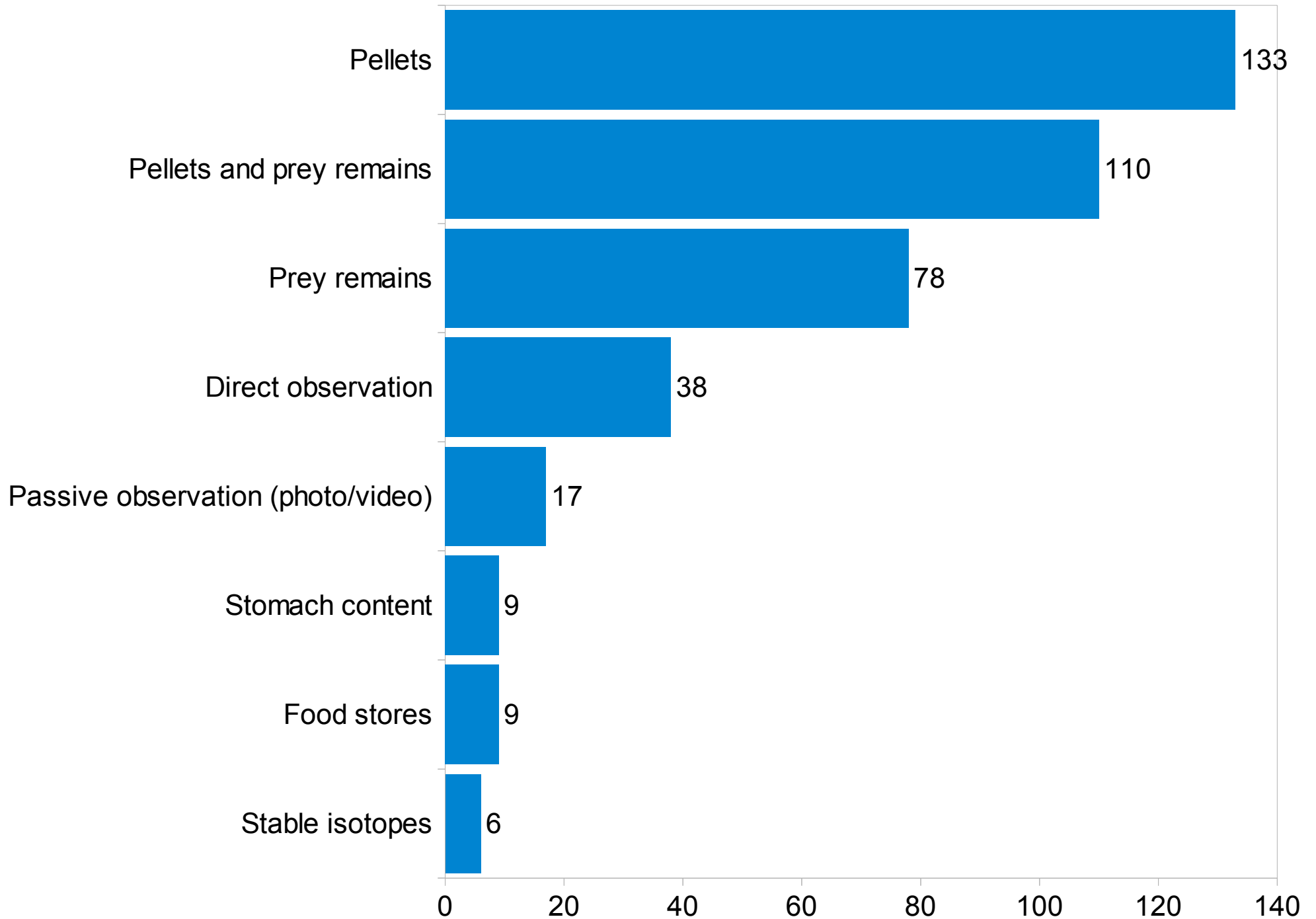
RAPTOR GROUP REPRESENTATIVENESS



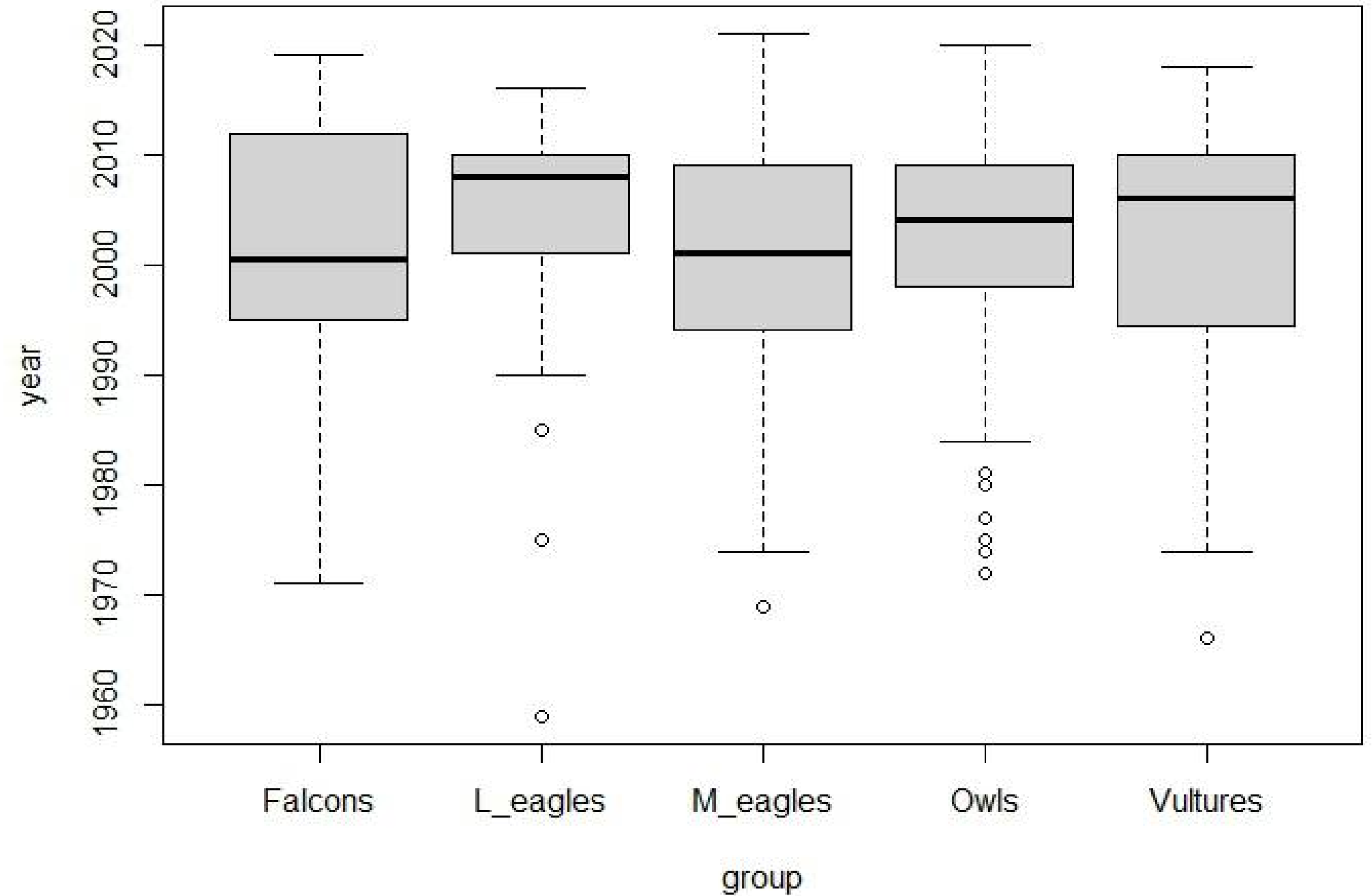
SPECIES REPRESENTATIVENESS



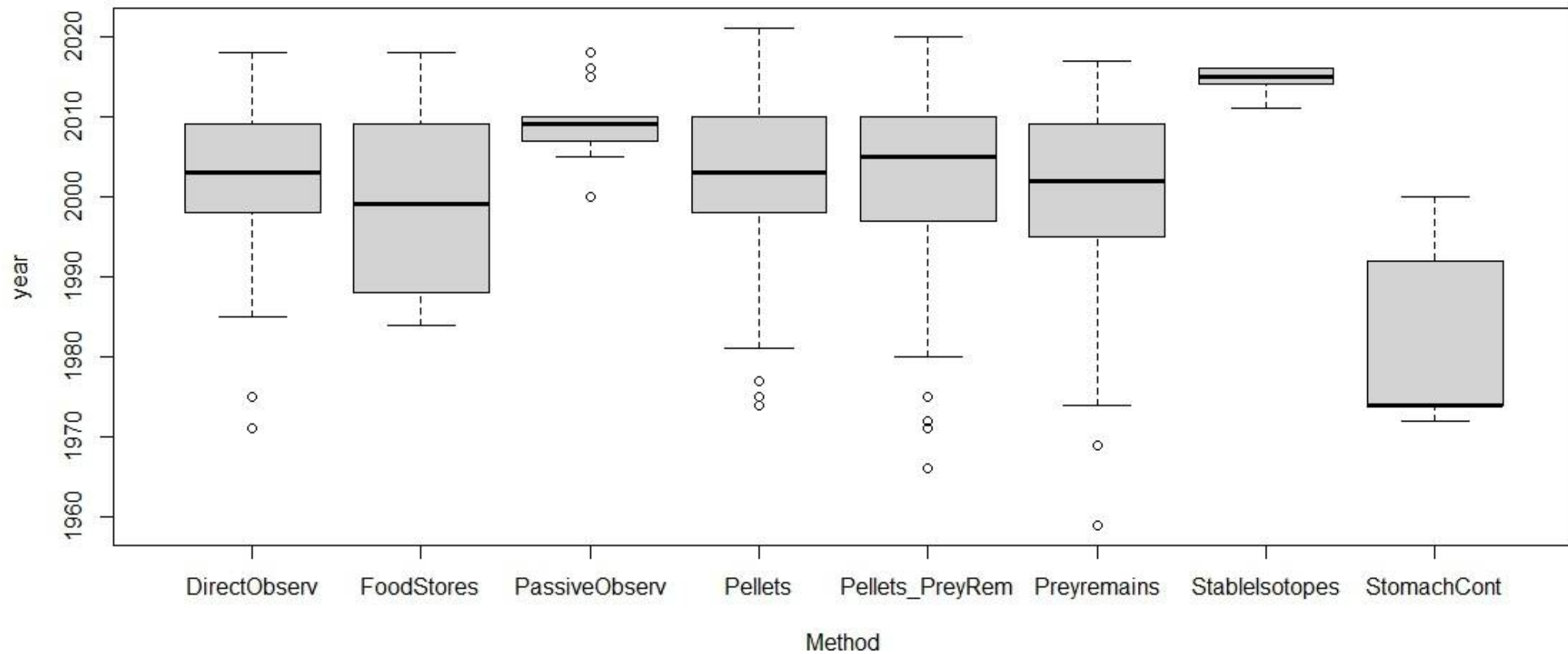
NUMBER OF ENTRIES PER DIET STUDY METHOD



PUBLICATION YEAR VS. RAPTOR GROUP



PUBLICATION YEAR VS. DIET STUDY METHOD

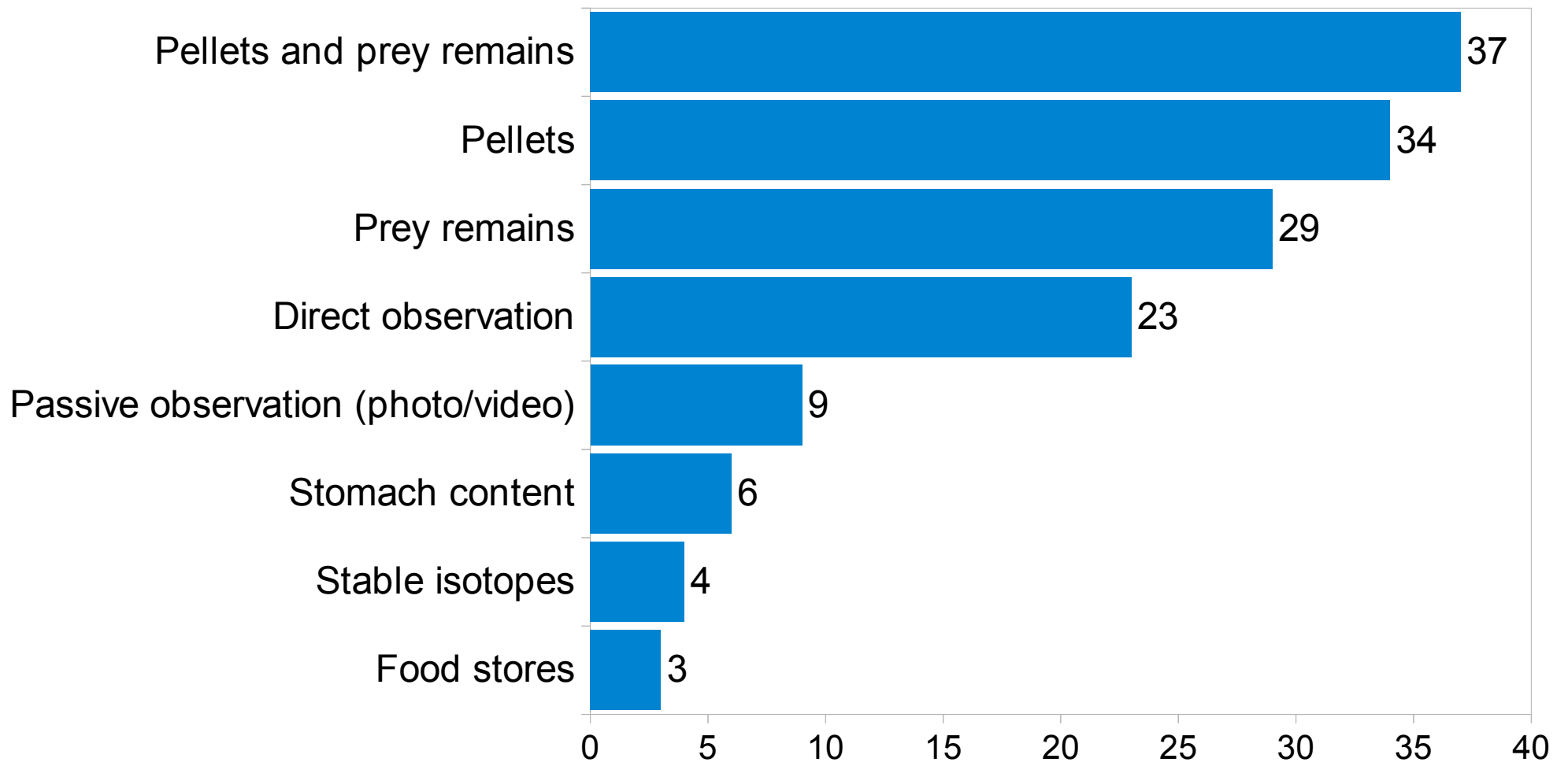


2. MAIN RESULTS OF THE LITERATURE REVIEW

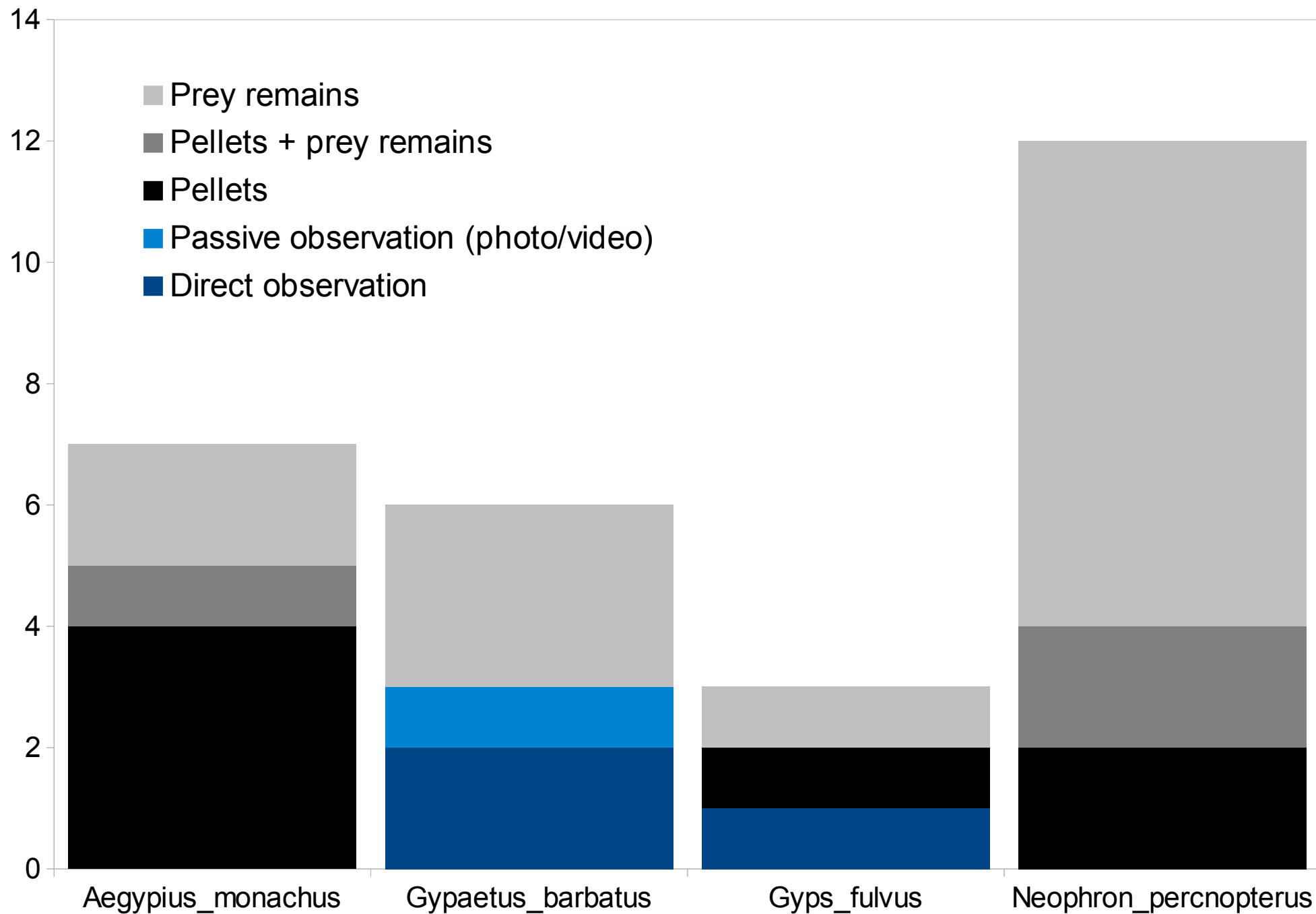


2.1. METHODS VS. RAPTOR GROUPS/SPECIES

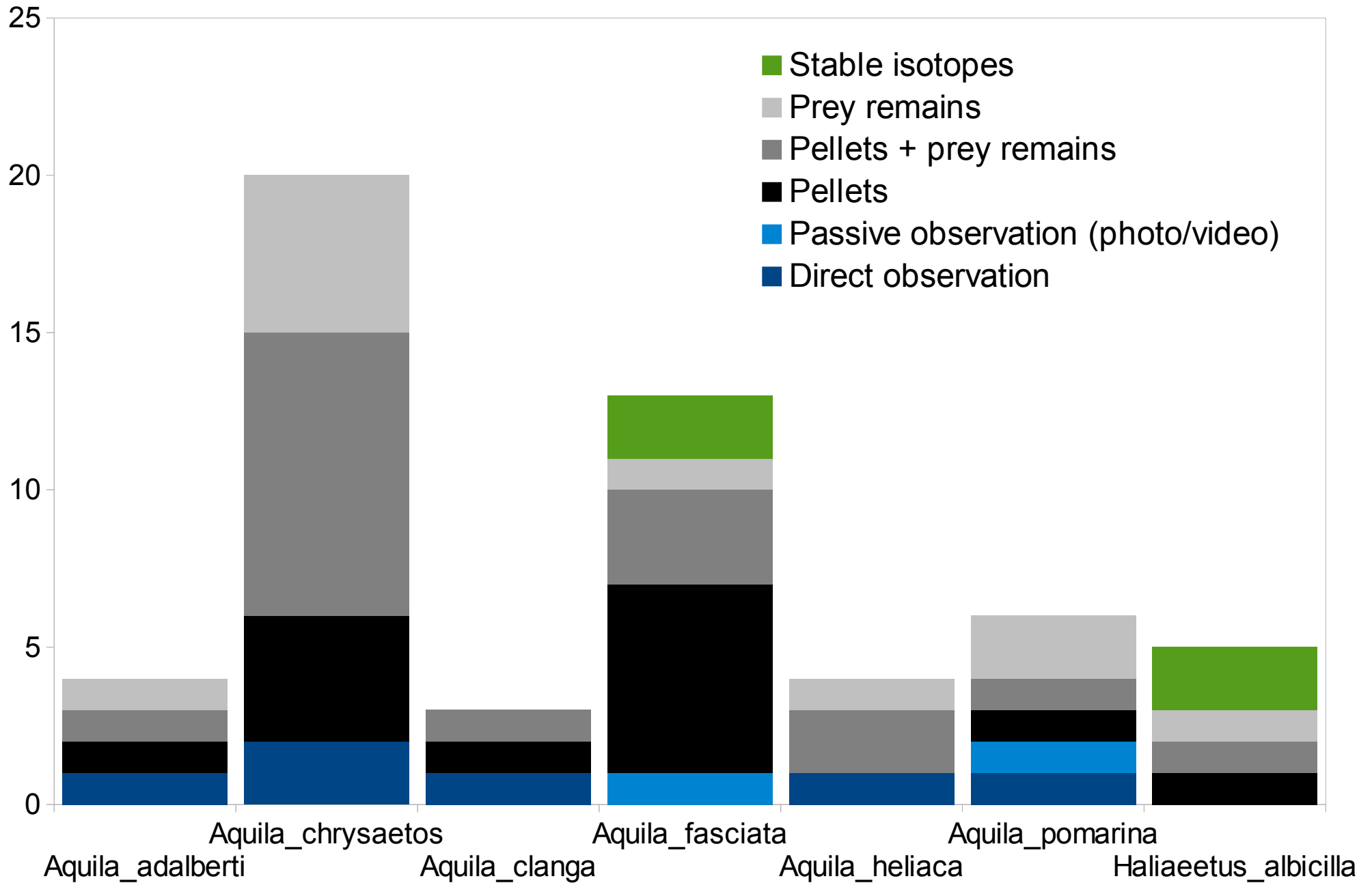
Number of species for which the method is used



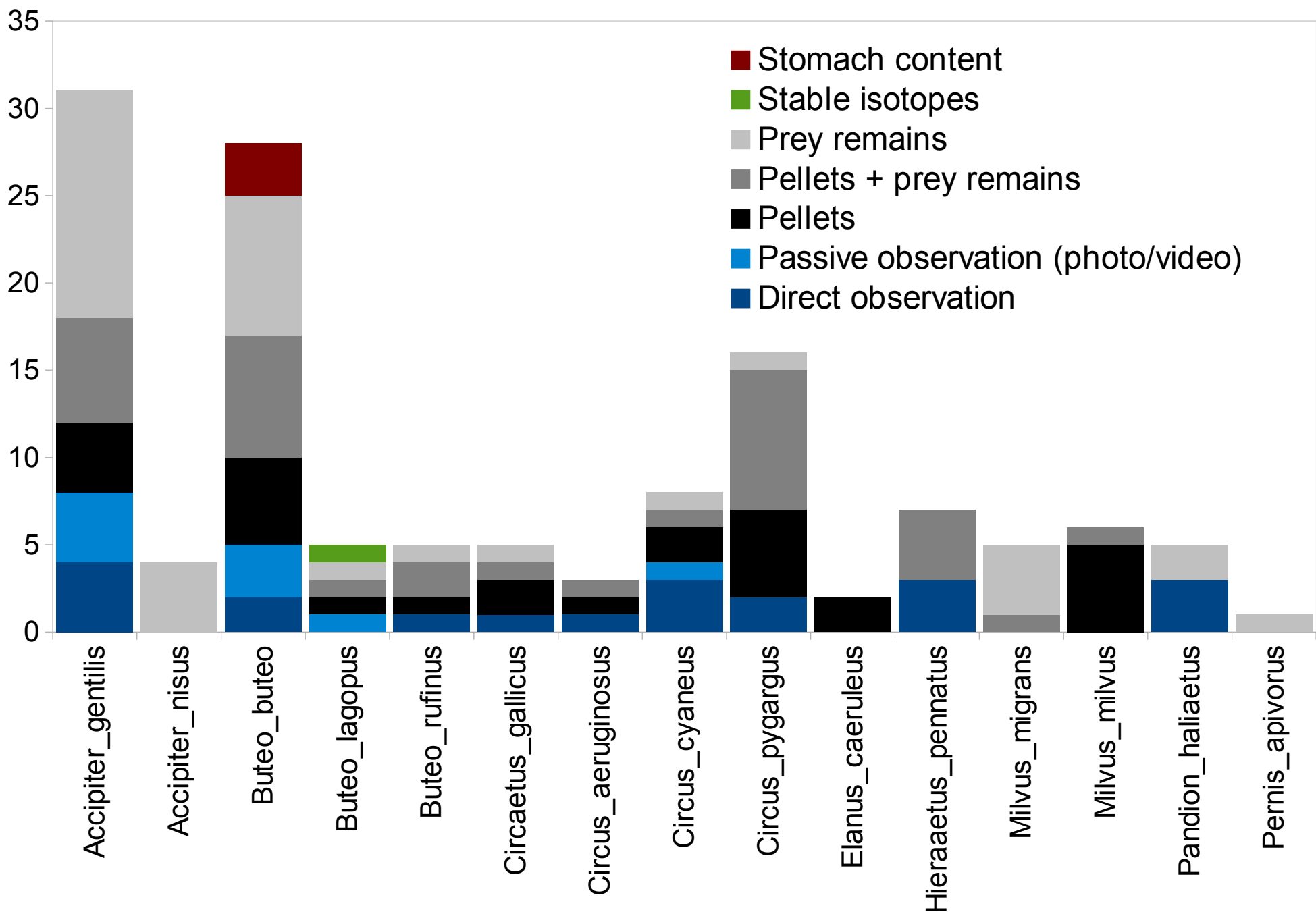
Vultures



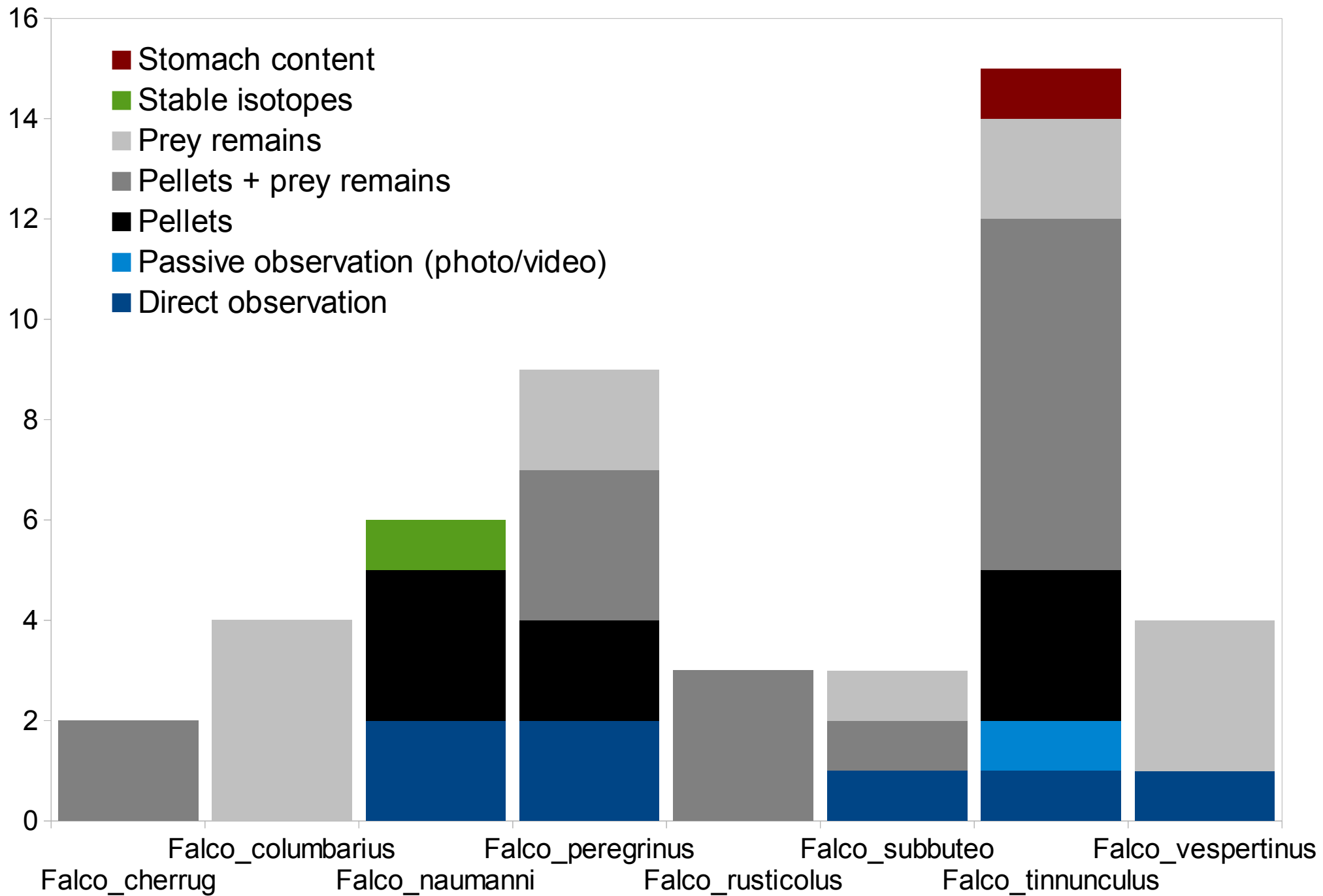
Large eagles



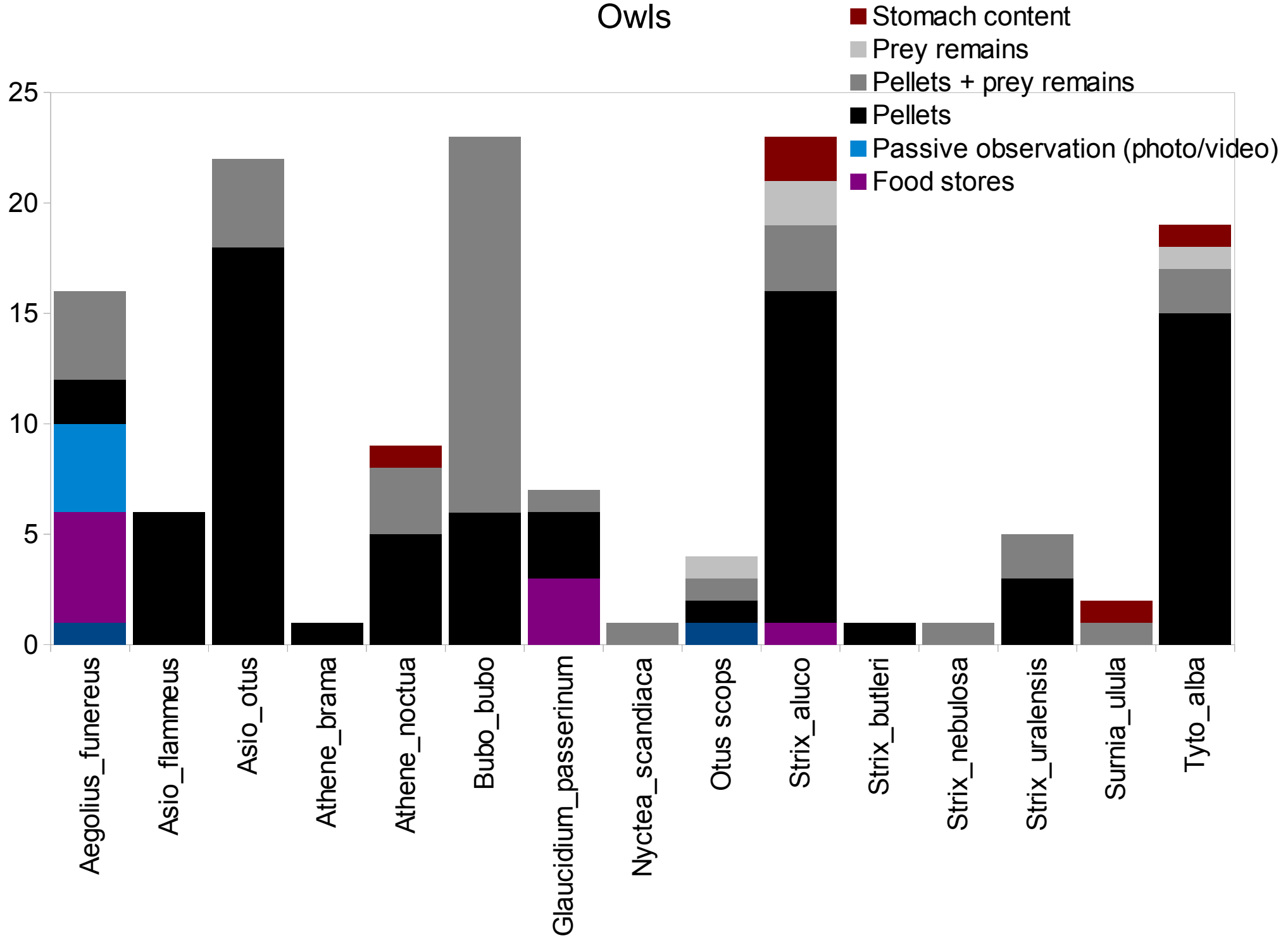
Medium/small raptors

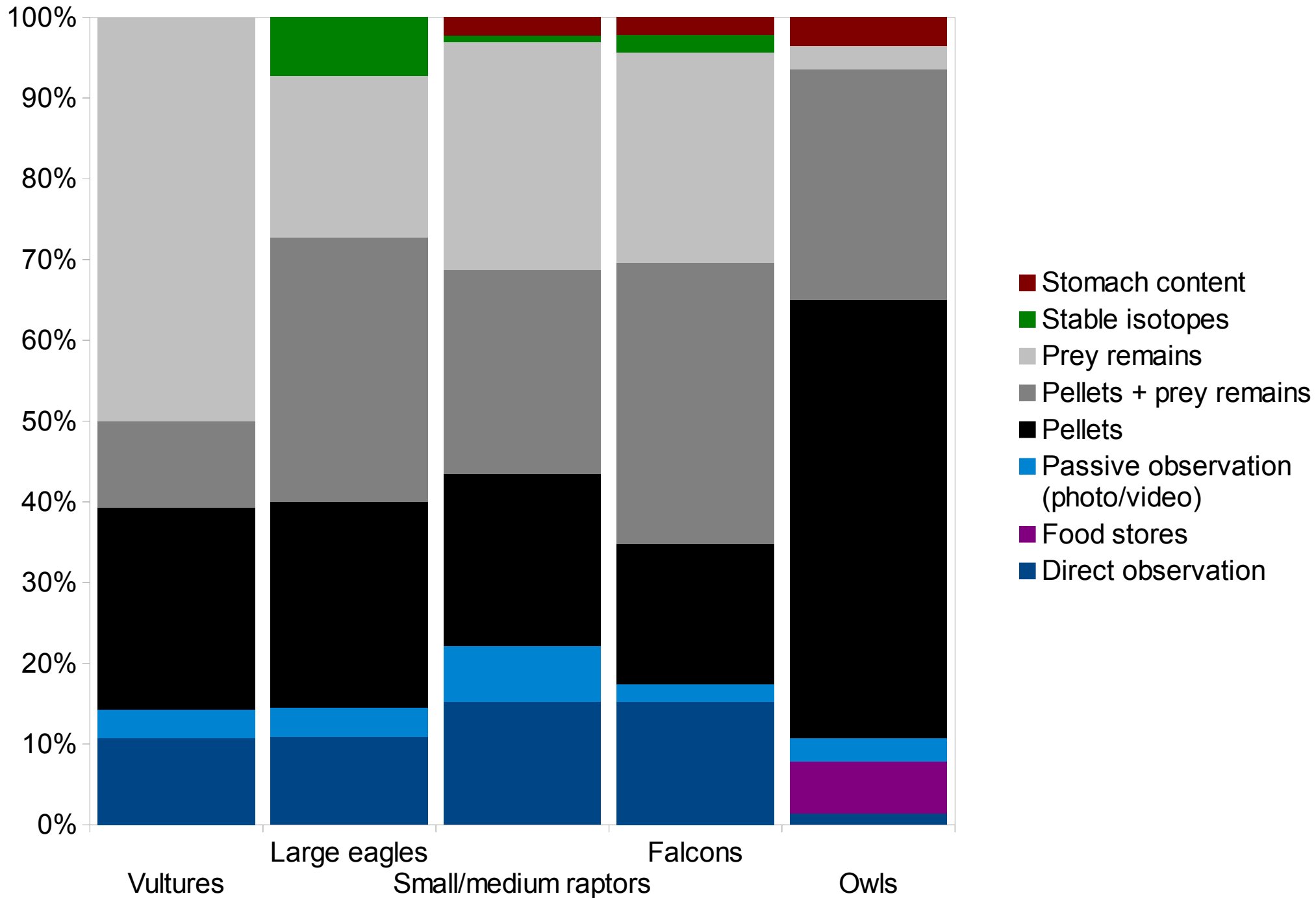


Falcons



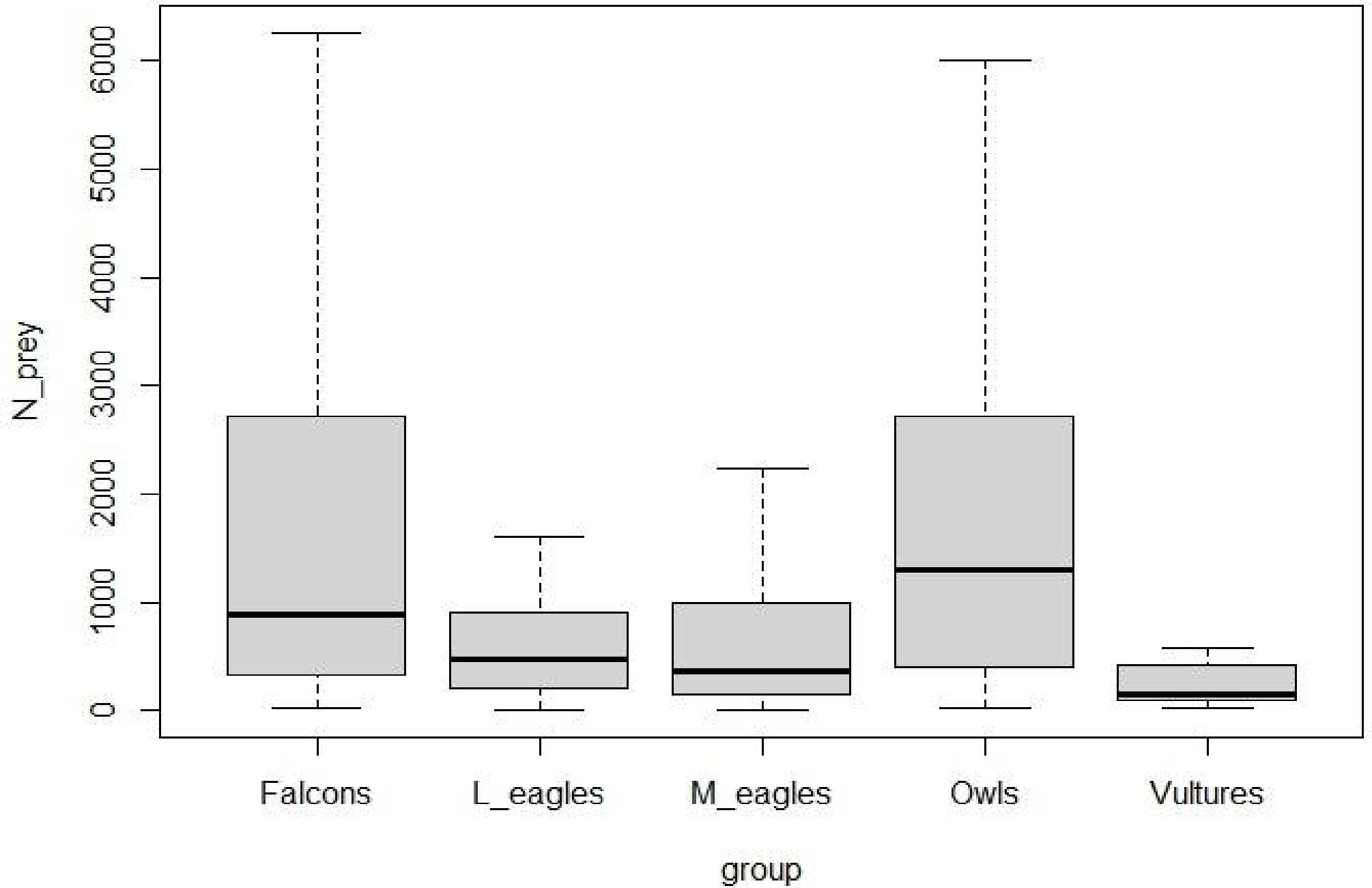
Owls



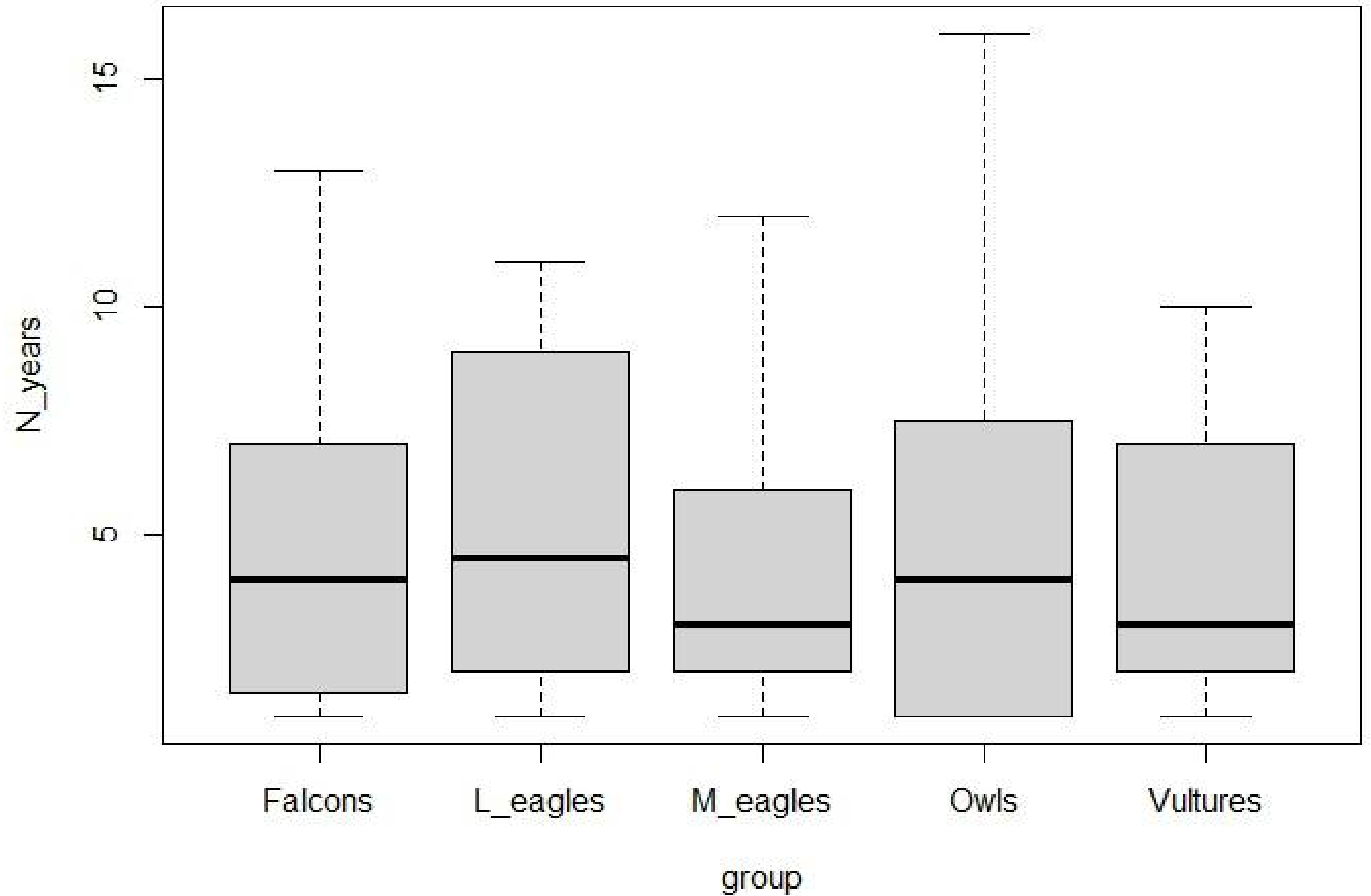


2.2. SAMPLE SIZE EFFECTS PER RAPTOR GROUP

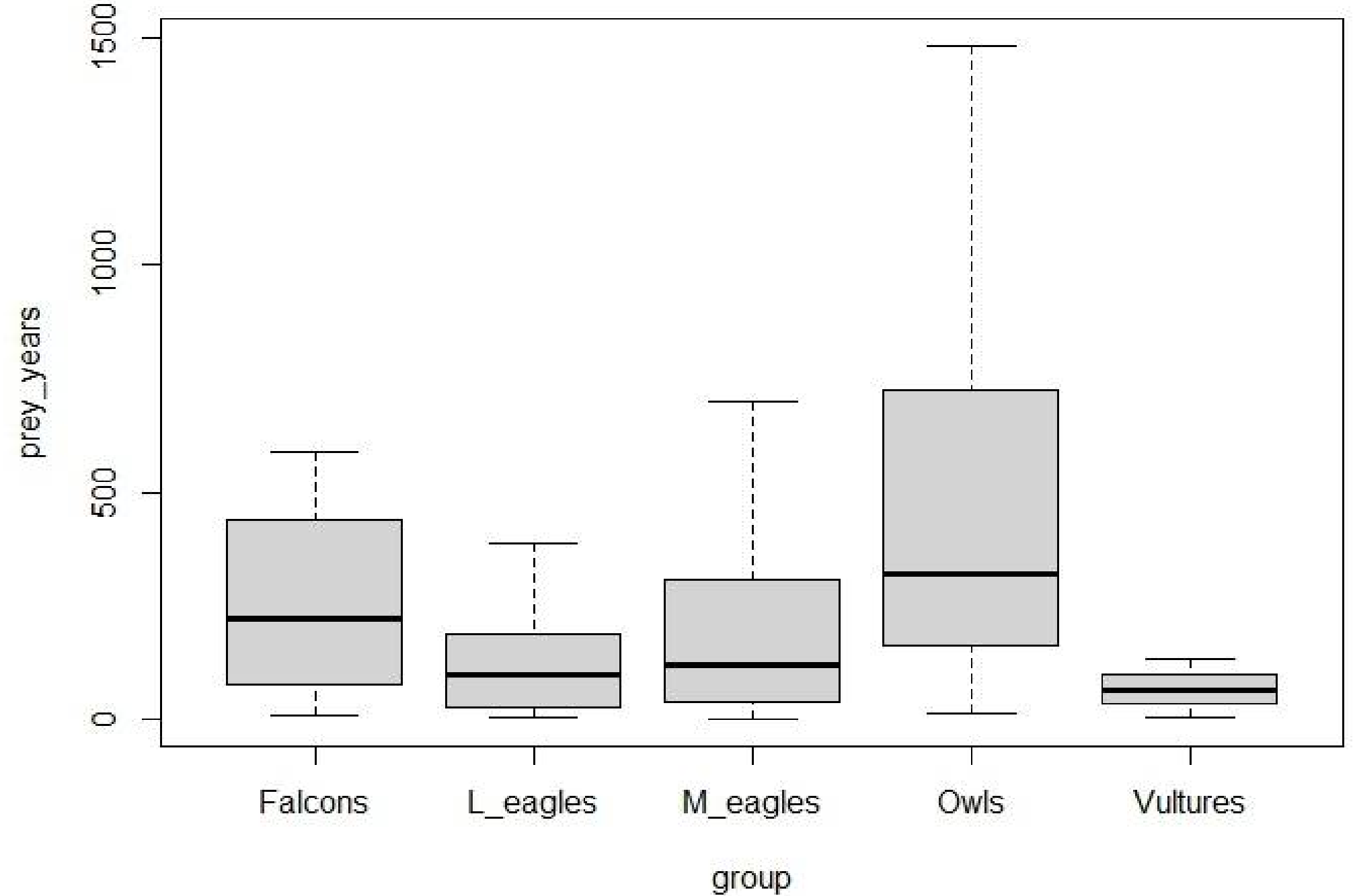
SAMPLE SIZE VS. RAPTOR GROUP



NUMBER OF YEARS VS. RAPTOR GROUP

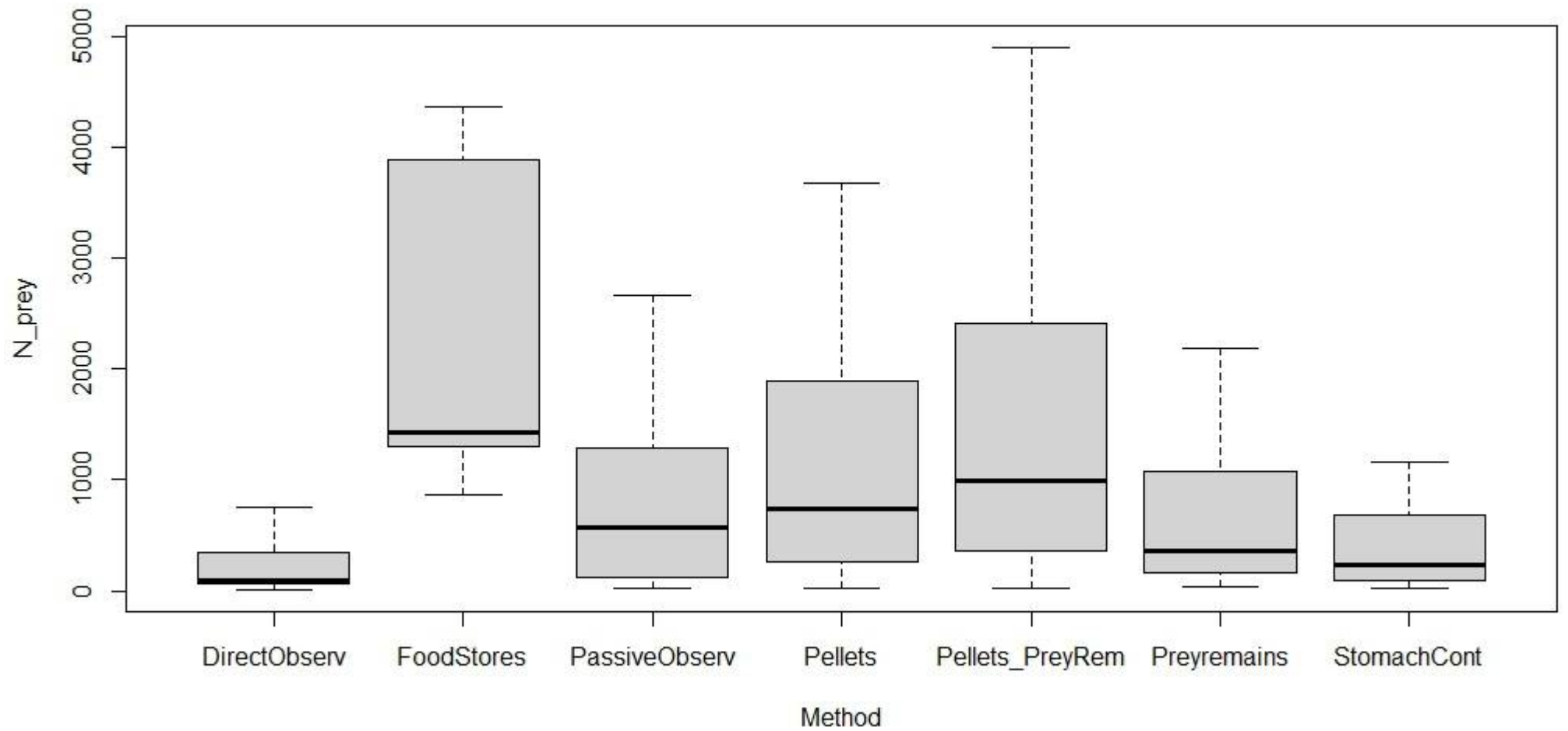


SAMPLE SIZE PER YEAR VS. RAPTOR GROUP

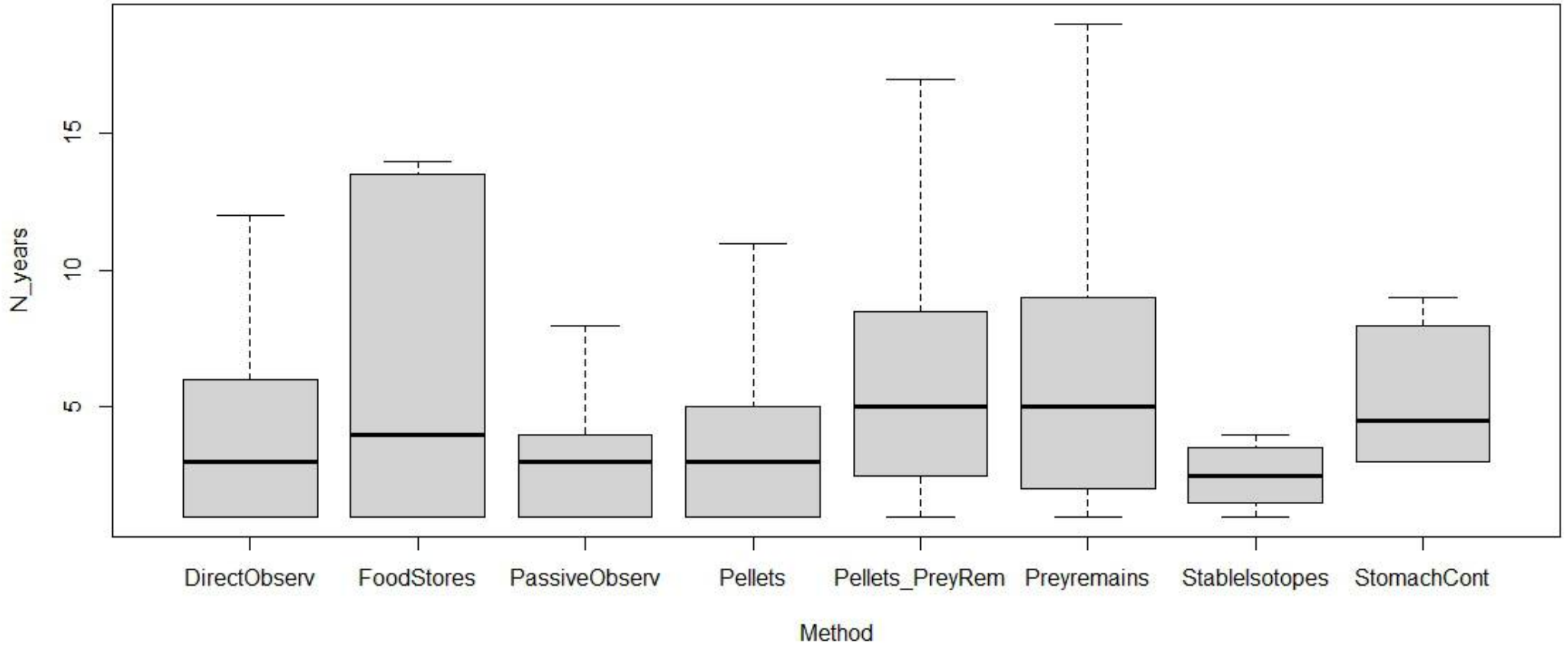


2.3. SAMPLE SIZE EFFECTS PER DIET STUDY METHOD

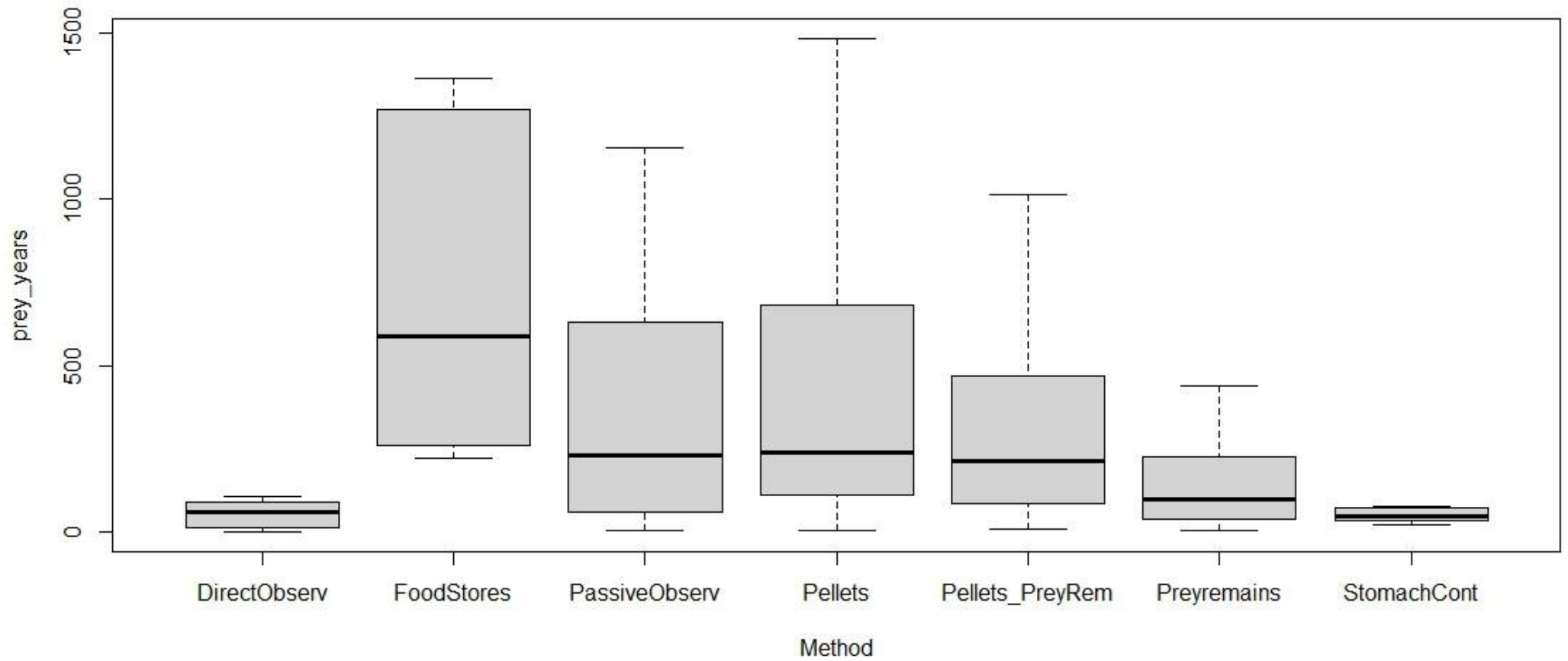
SAMPLE SIZE VS. DIET STUDY METHOD



NUMBER OF YEARS VS DIET STUDY METHOD



SAMPLE SIZE PER YEAR VS. DIET STUDY METHOD



3. RECOMMENDATIONS TO INCLUDE IN THE ADVICE HUB



ADVICE HUB

HOW TO MONITOR RAPTORS

How to obtain contextual data on the diet of raptors

A) Main methods used to study the diet of raptors

- Description of each method
- Table with advantages/disadvantages of each method and species/groups for which it is used

B) Main parameters used to describe the diet of raptors

Quantification parameters and diet diversification measurements

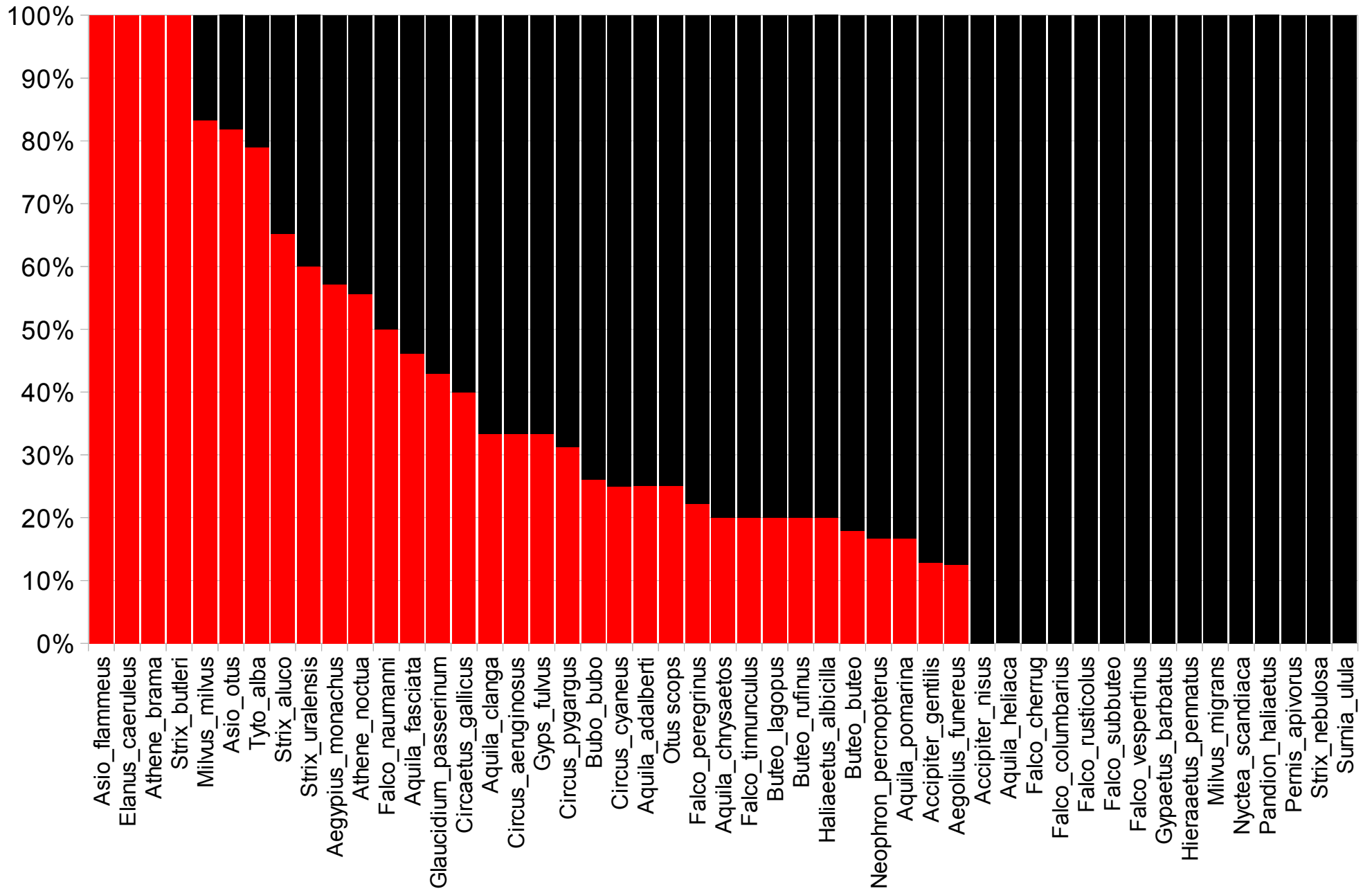
C) References to scientific articles and books

D) Links to webpages

Summary table of methods to study the diet of raptors

METHOD	ADVANTAGES	DISADVANTAGES	GROUPS/SPECIES
<p>Pellets</p>	<ul style="list-style-type: none"> - Easy to collect - Easy to preserve - Collectable in large numbers - Possibility to identify prey to species level 	<ul style="list-style-type: none"> - May underestimate large prey - Less suitable for raptors that do not ingest hard parts or large bones - Depends on finding a nest site, roost site or regular perch 	<p>Owls Large eagles Harriers Falcons</p> <p>[<i>Acc_gen</i>; <i>Aeg_fun</i>; <i>Aeg_mon</i>; <i>Aqu_ada</i>; etc.]</p>
<p>Prey remains</p>	<ul style="list-style-type: none"> - Can be combined with pellets (pooled) - Can be collected in accessible feeding perches when nest is not accessible - Easy to collect for most species - Easy to identify prey 	<ul style="list-style-type: none"> - May underestimate small prey - May be biased to food delivered to fledglings / food ingested by adults - In some raptor species it may not yield a large sample size 	<p>Vultures Large eagles Medium sized raptors Falcons</p> <p>[<i>Acc_gen</i>; <i>Acc_nis</i>; <i>Aeg_mon</i>; <i>Aqu_ada</i>; etc.]</p>

Pellets (proportion of methods)





THANK YOU FOR YOUR ATTENTION