

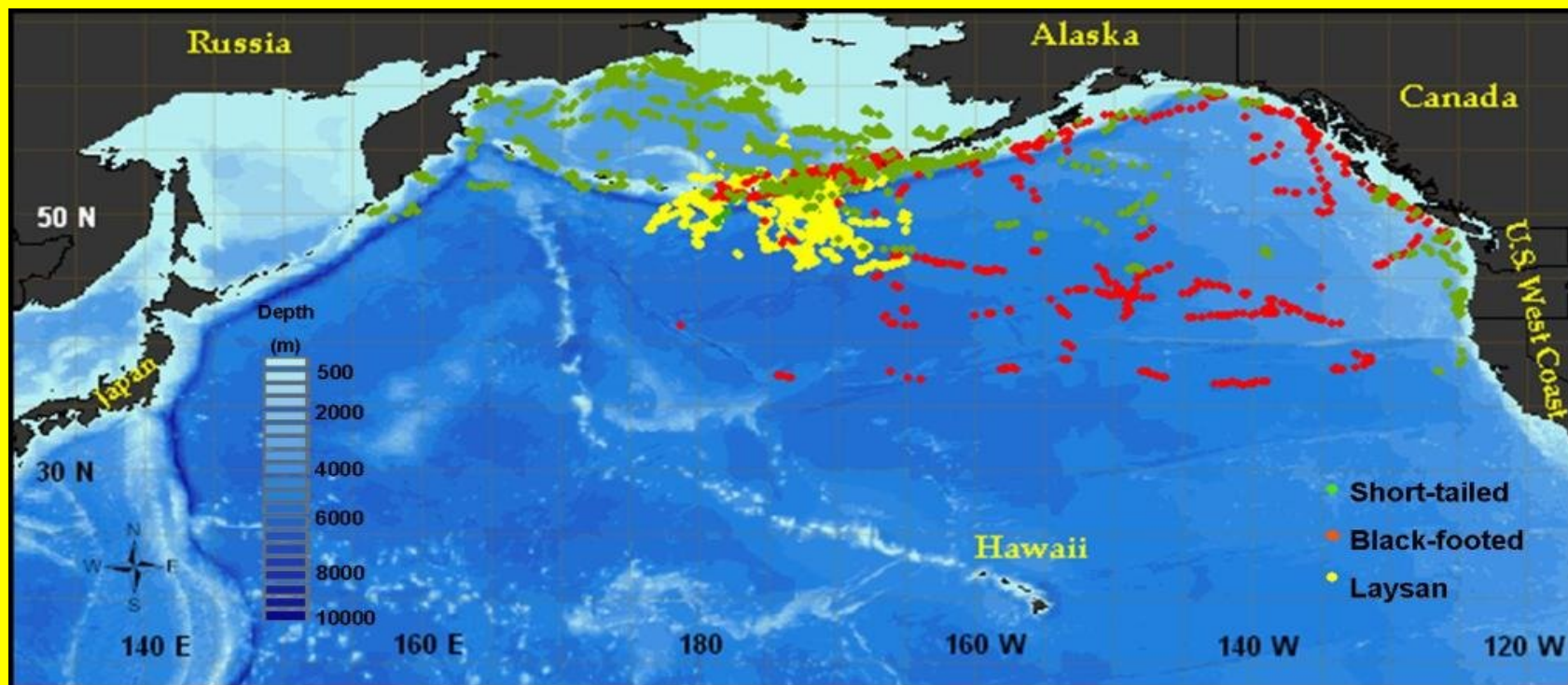
HOW MUCH BAIT WOULD AN ALBATROSS TAKE IF AN ALBATROSS COULD TAKE BAIT?

JEREMY BISSON UH Manoa, Dept. of Zoology
DAVID C. DUFFY UH Manoa, Dept. of Botany

LAYSAN AND BLACK-FOOTED ALBATROSSES



ALBATROSSES RELEASED DURING SUMMER IN ALEUTIANS



Robert Suryan, Karen Fischer, and Greg Balogh

PELAGIC LONGLINE FISHING



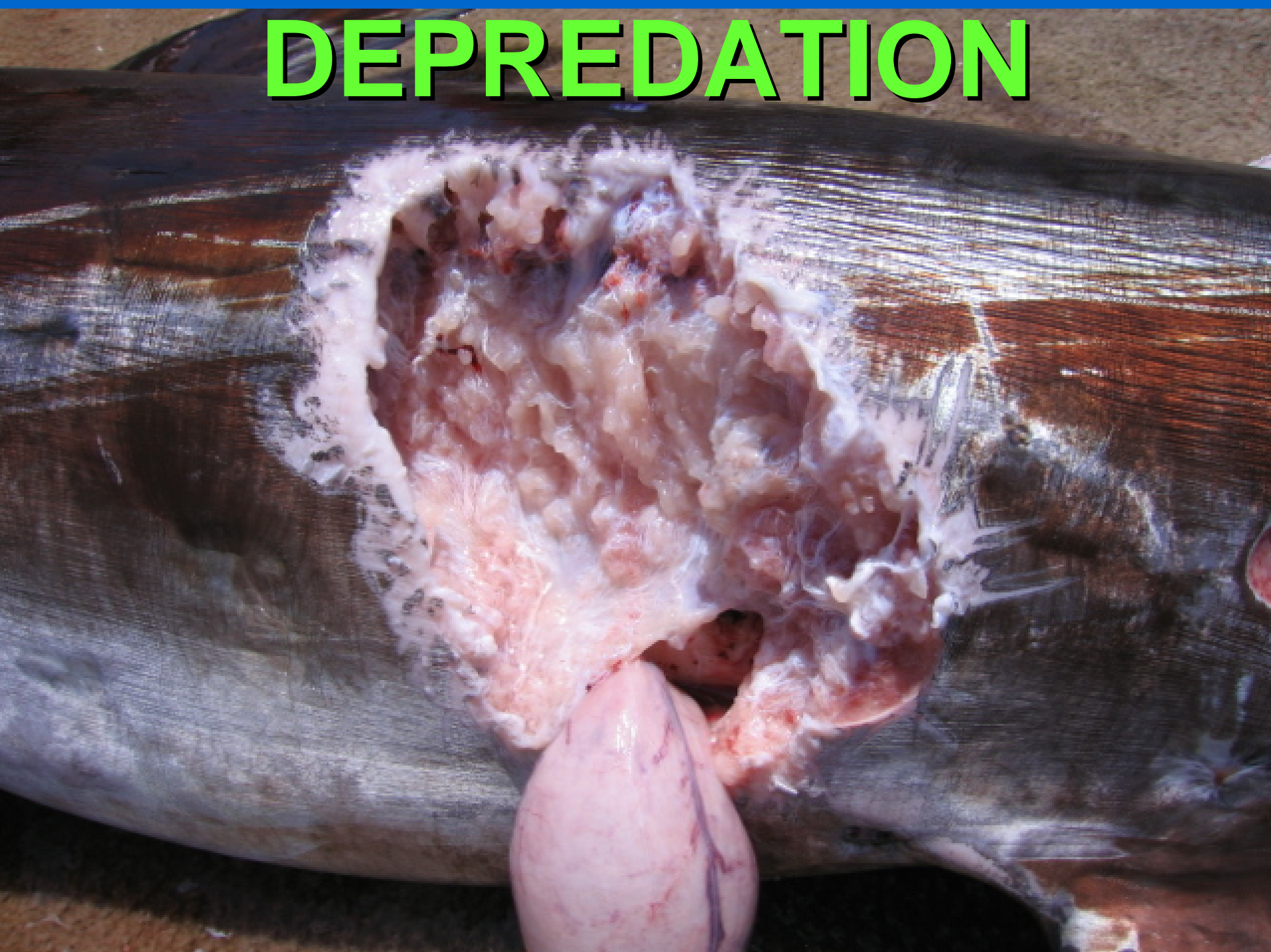
BAIT



OFFAL



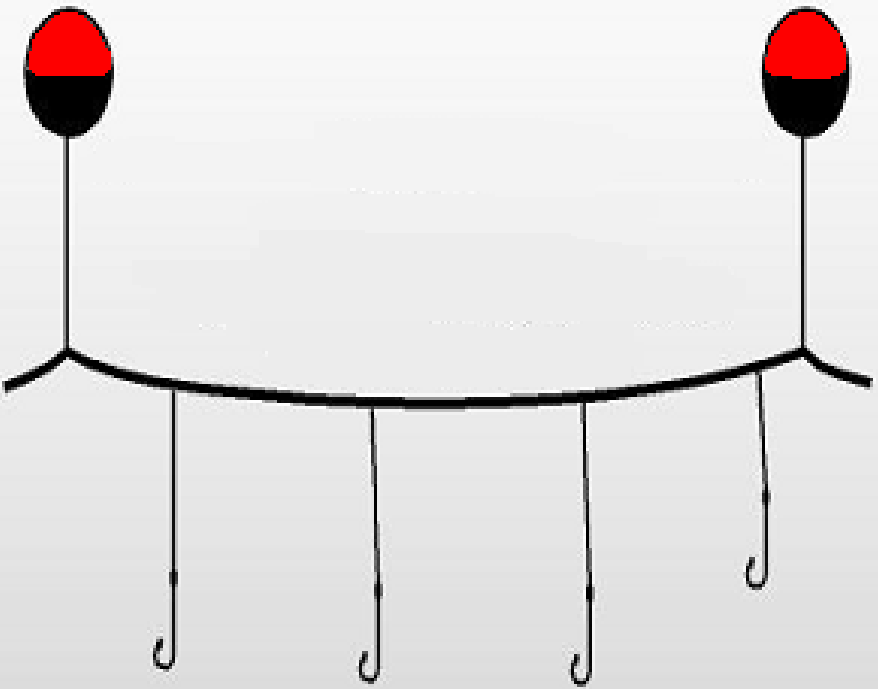
DEPREDATION



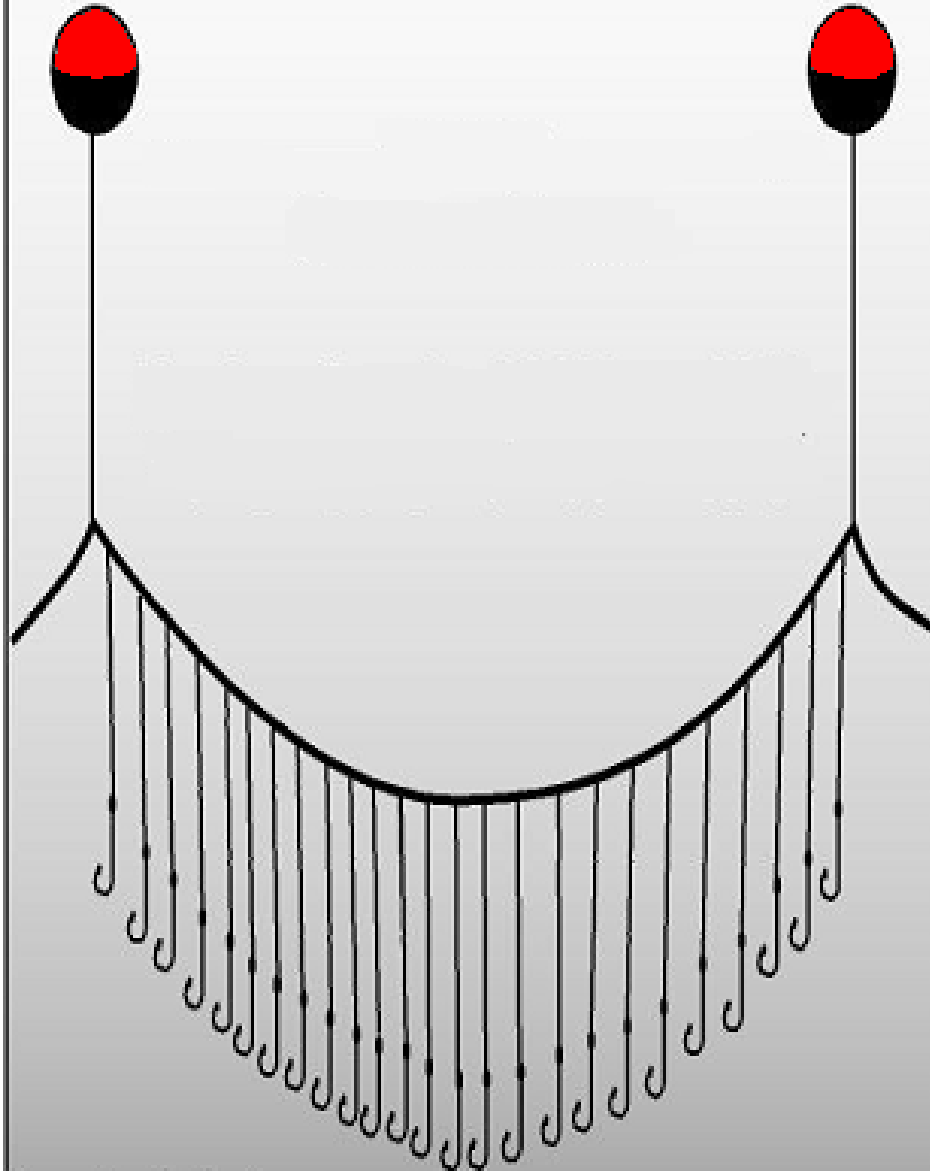




Swordfish Set

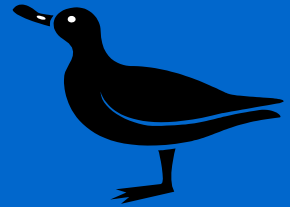


Tuna Set

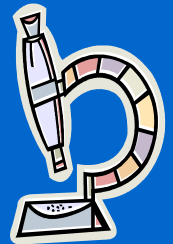


METHODS

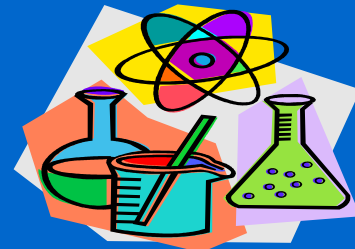
SALVAGE ALBATROSSES



**DIGESTIVE TRACT CONTENT
ANALYSIS**



STABLE ISOTOPE ANALYSIS



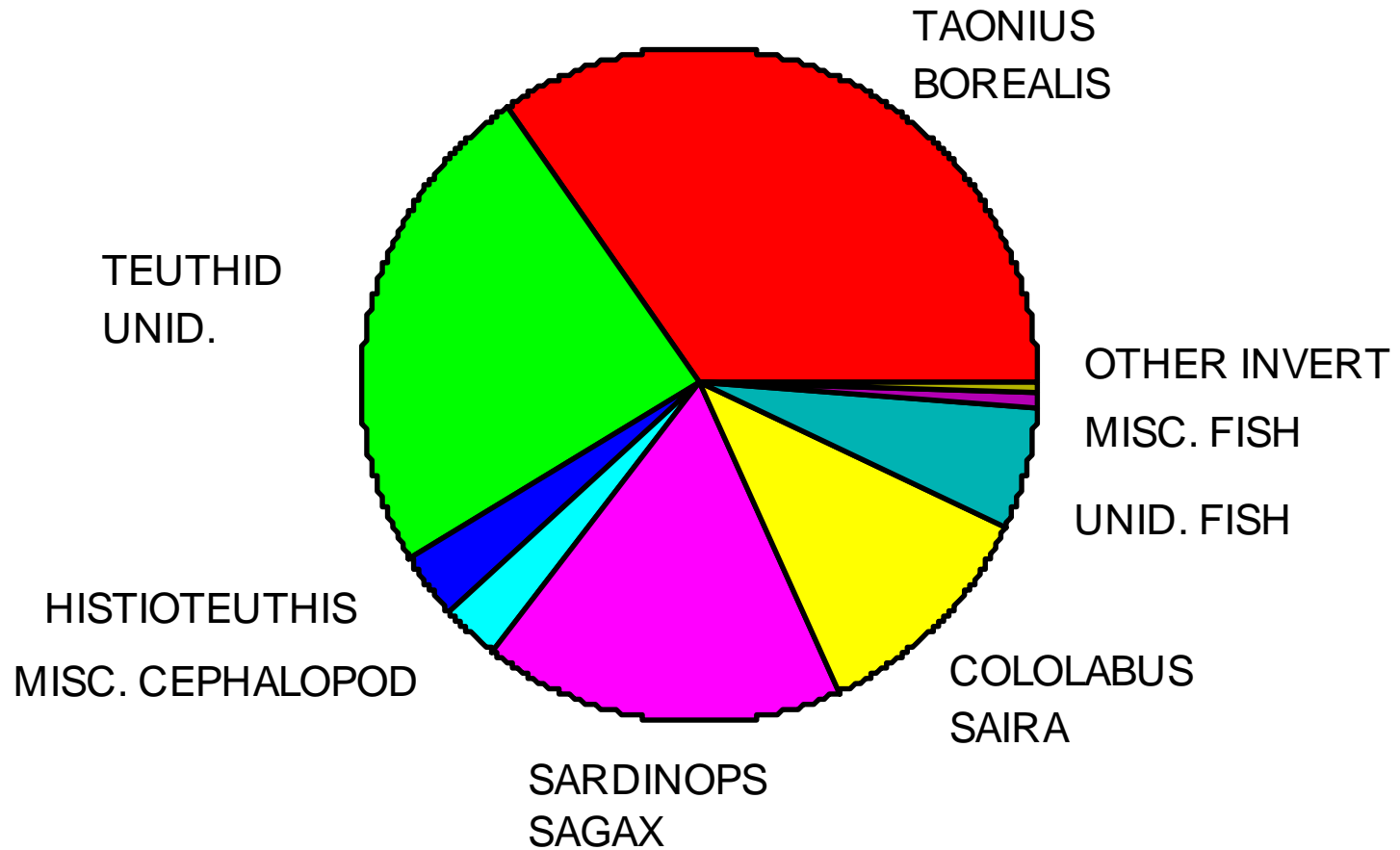
GUT ANALYSIS METHODS

**IDENTIFY, COUNT AND WEIGH PREY FROM
STOMACH CONTENTS**

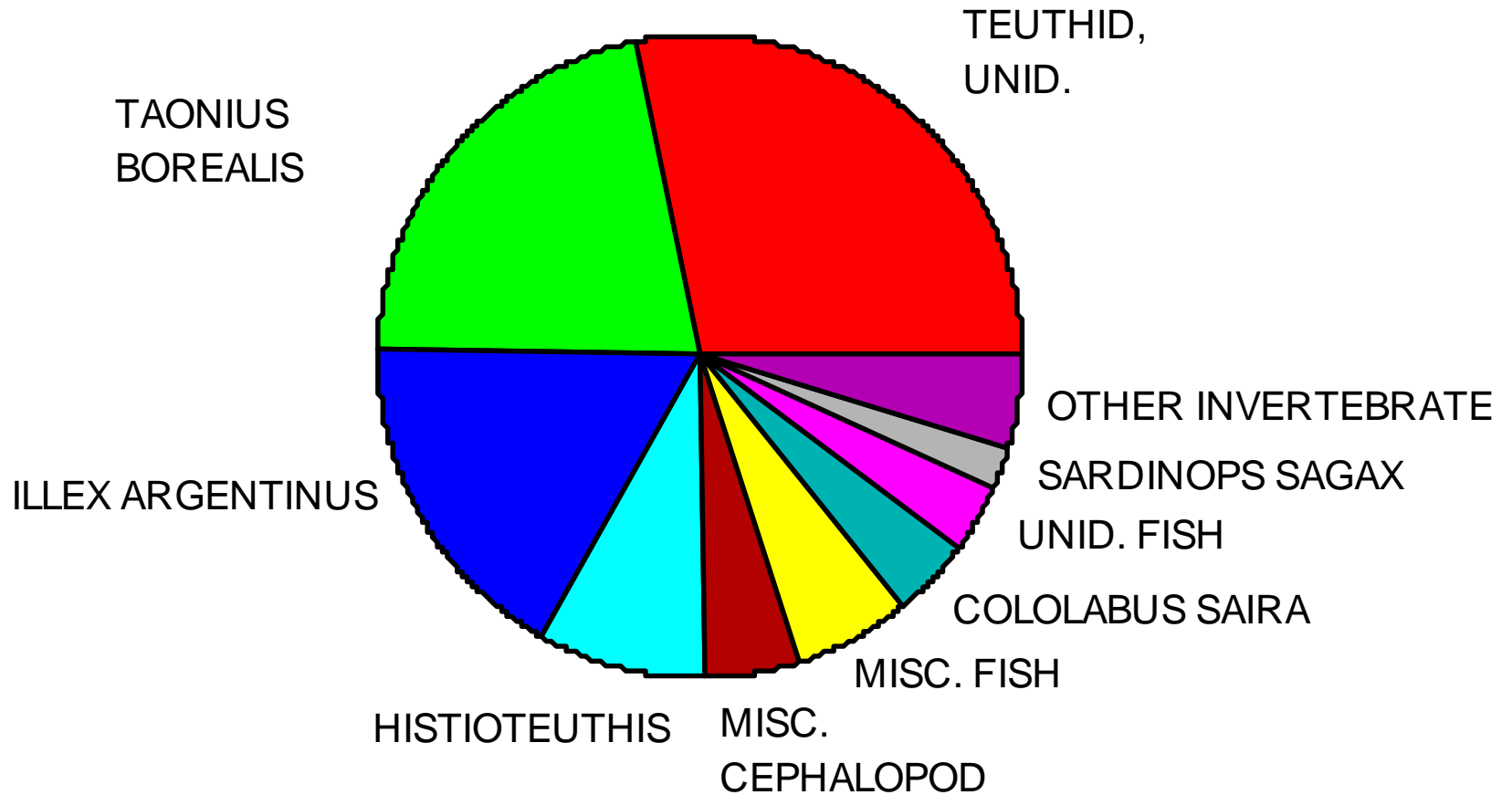
**CALCULATE AN INDEX OF RELATIVE
IMPORTANCE**

IRI = % FREQUENCY (% MASS + % NUMBER)

DIET OF LAYSAN ALBATROSS

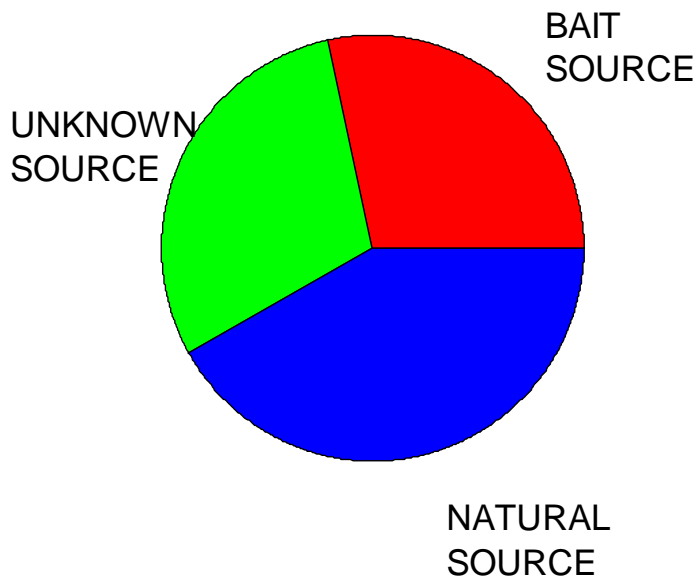


DIET OF BLACKFOOTED ALBATROSSES

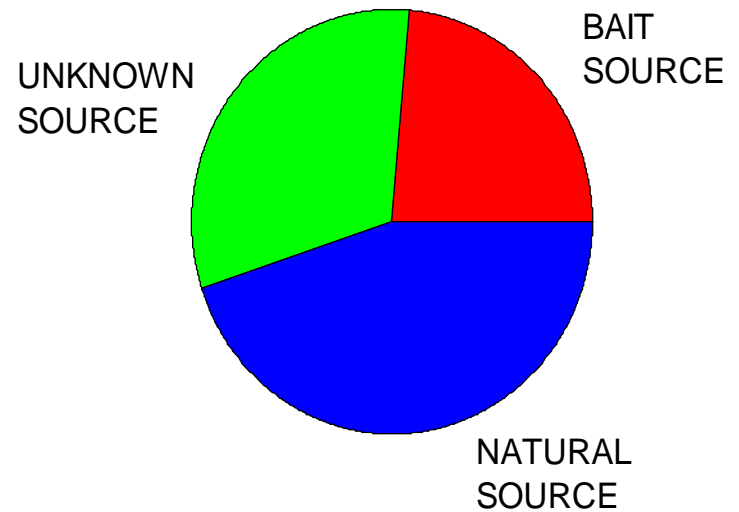


DIET SOURCES

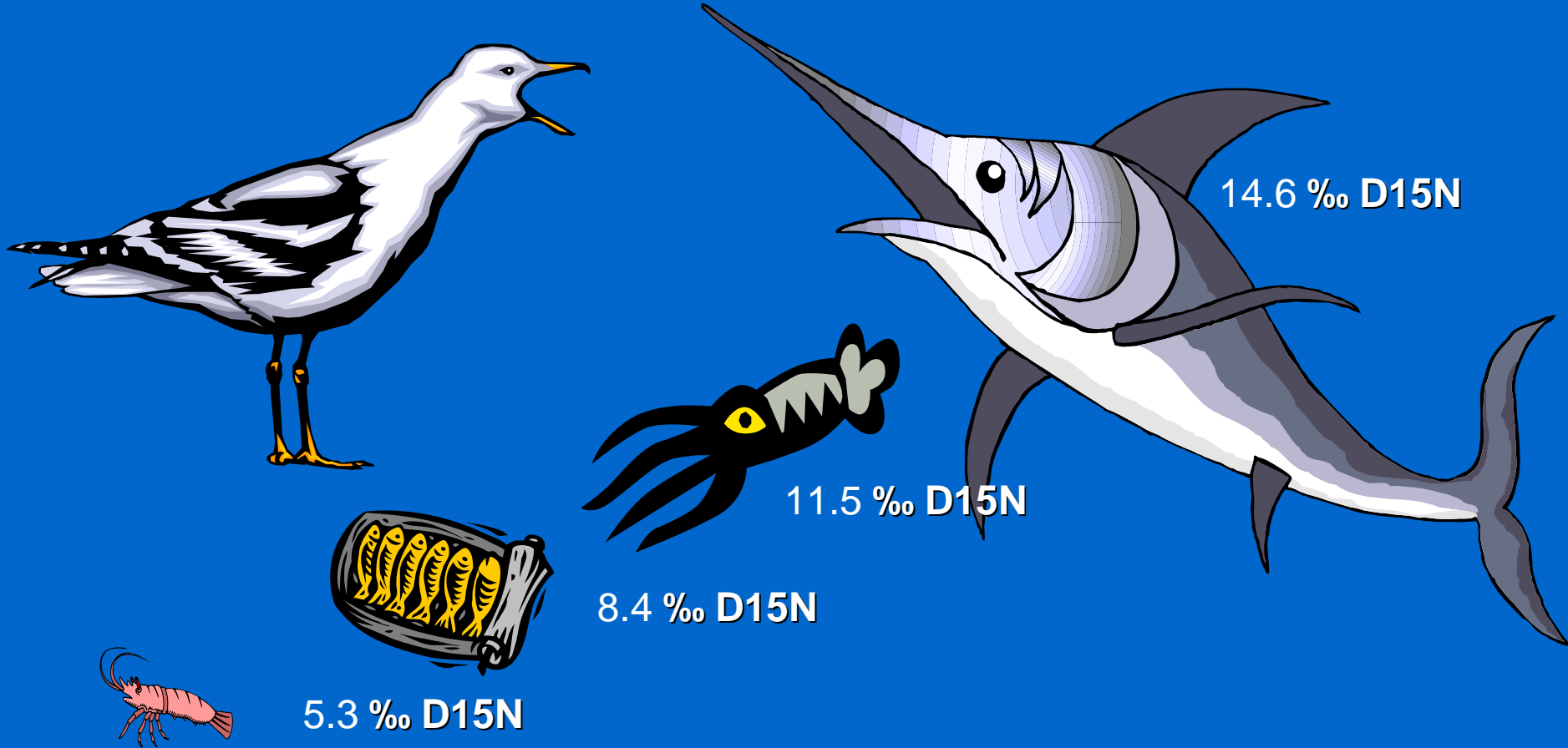
LAYSAN ALBATROSS



BLACK-FOOTED ALBATROSS



TROPHIC POSITIONS

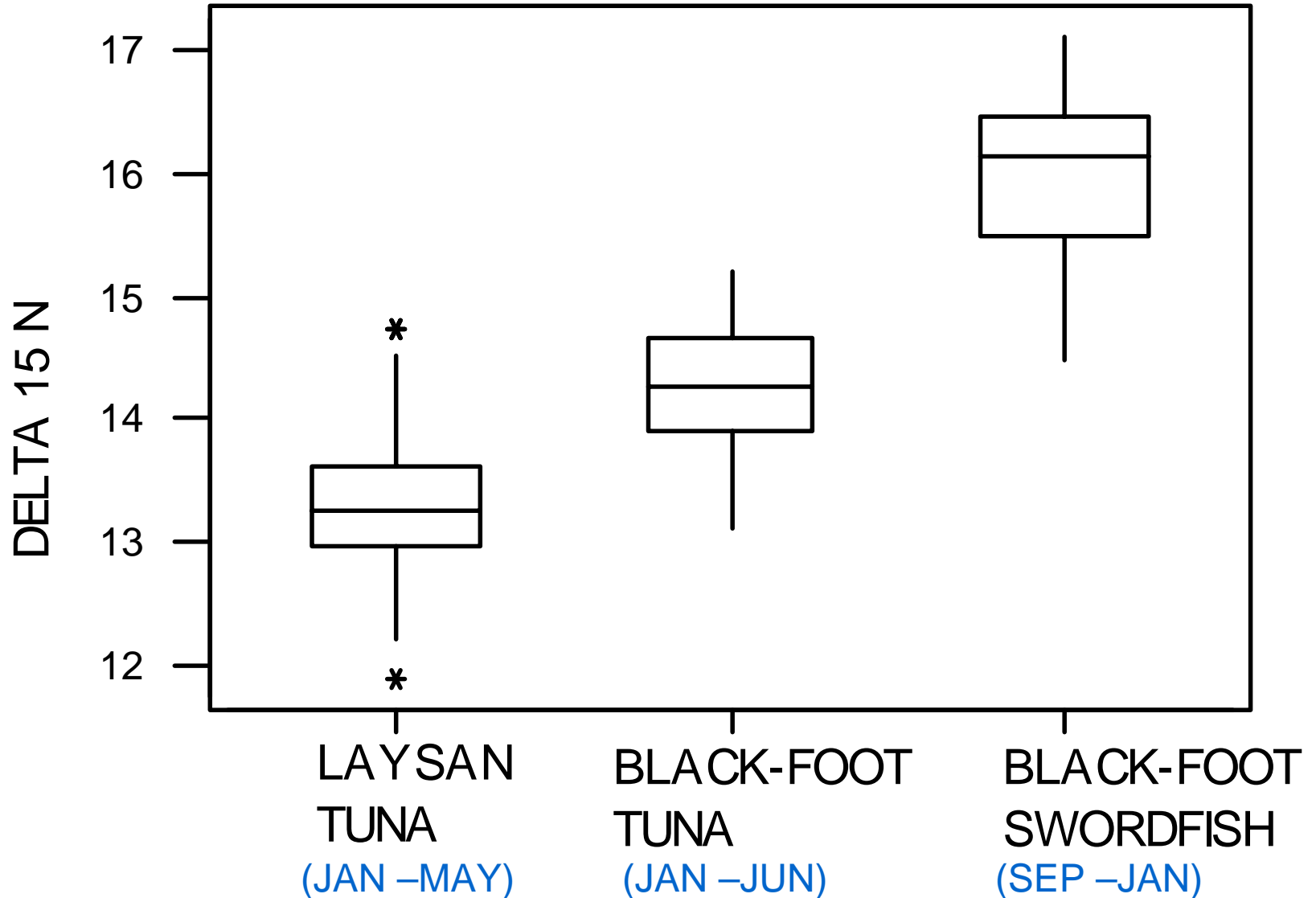


**AN ANIMAL IS ENRICHED OVER THE AVERAGE
DELTA 15N OF ITS DIET BY 3.1 ‰**

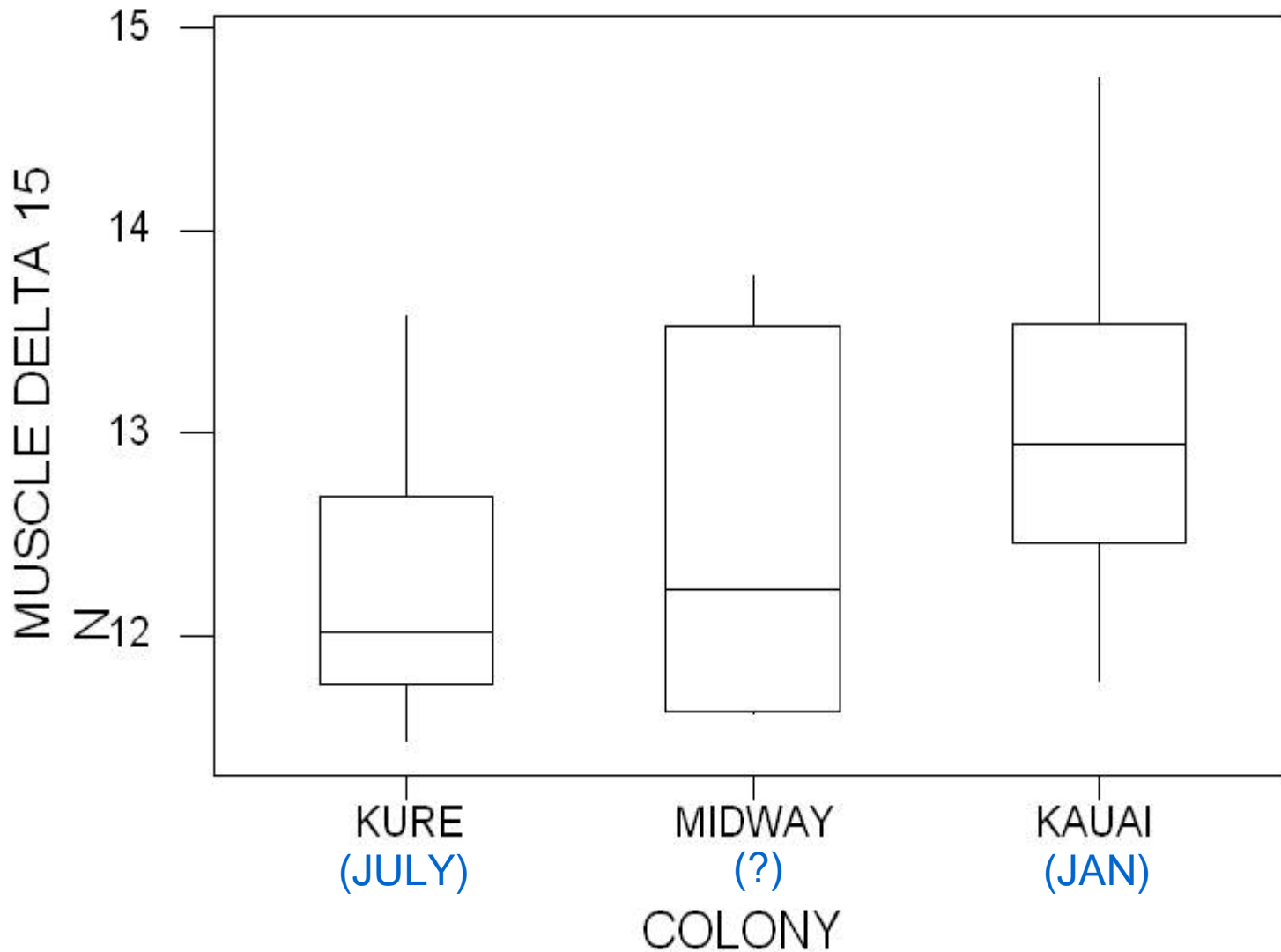
CAVEATS

- REGIONAL DIFFERENCES IN STABLE NITROGEN ISOTOPE CONCENTRATIONS
- TISSUE FRACTIONATION MAY BE DIFFERENT IN ALBATROSSES
- ACTUAL TURNOVER RATE (METABOLIC)

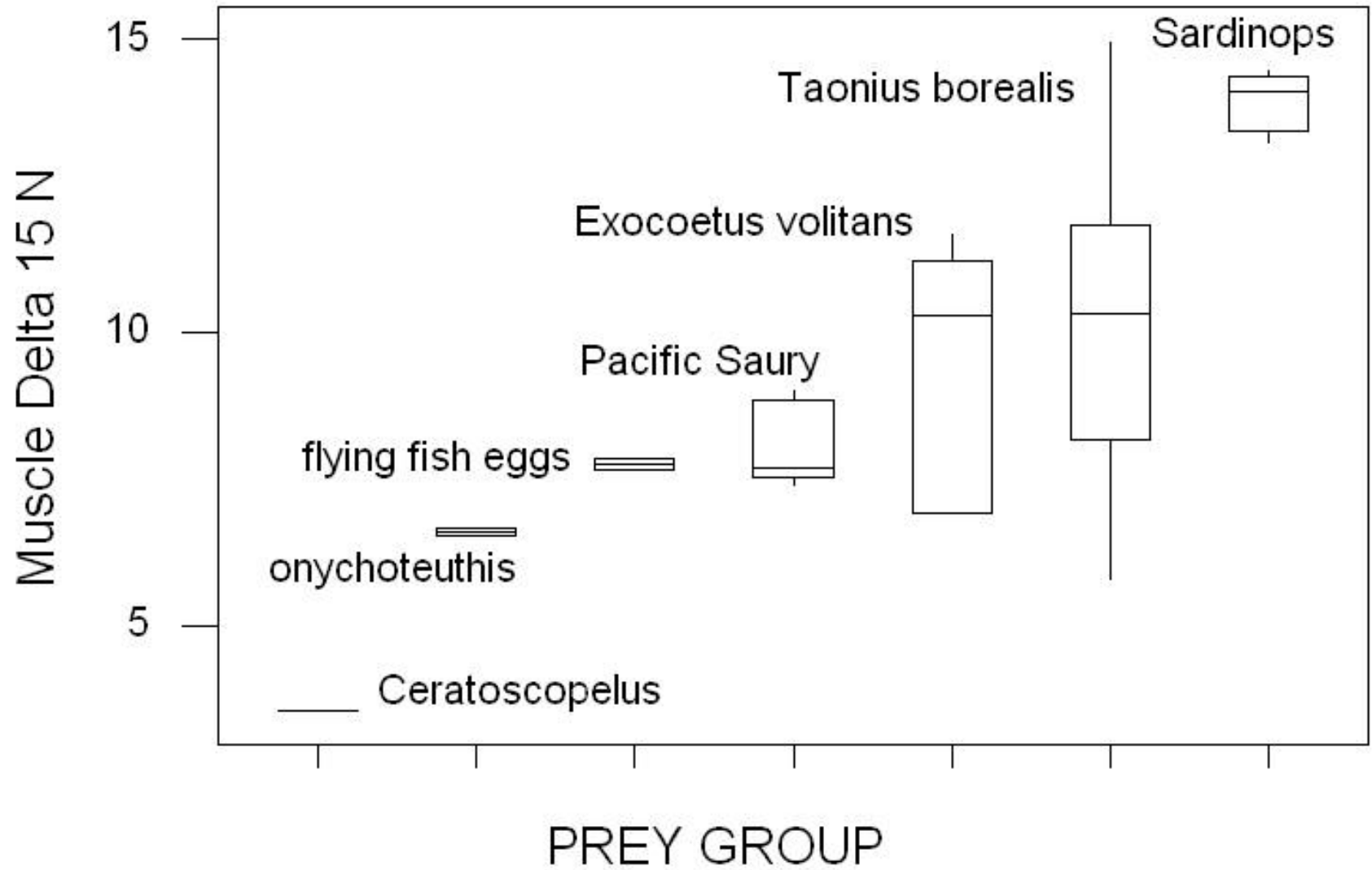
ALBATROSSES FROM LONGLINE VESSELS



LAYSANS FROM COLONIES



PREY ISOTOPES



CONCLUSIONS

- **LONGLINING INFLUENCES ALBATROSS DIETS THROUGH THE DISCARD OF BAIT AND OFFAL**
- **LAYSAN AND BLACK-FOOTED ALBATROSSES ASSOCIATING WITH TUNA LONGLINE VESSELS HAVE DIFFERENT DIETS**
- **DIFFERENTIAL CONSUMPTION OF BAIT CAN INFLUENCE ALBATROSS ISOTOPIC CONCENTRATIONS**
- **OVERLAP IN STABLE ISOTOPE CONCENTRATIONS BETWEEN NATURAL AND LONGLINE RELATED FOOD ITEMS CONFOUNDS ALBATROSS ISOTOPE ANALYSES**

AKNOWLEDGEMENTS

NOAA FISHERIES **OBSERVERS** AND USFWS AND DLNR FIELD **BIOLOGISTS**

SHEILA CONANT AND BRIAN POPP

ADMINISTRATIVE HELP - RENA DUHL, DODIE LAW, KEVIN HIGAKI

GUT LAB

JODI COPEs
JANIS MATSUNAGA
NORMA BUSTOS
ERIC FORNEY
RICH KUPFER
DAN NAMUR
DARON MARSHALL
LINDSAY YOUNG
KELLY ESH
JOHN PESCHAN

STABLE ISOTOPE LAB

JAMIE TANIMOTO
TERRI WORK
RICHARD WALLSGROVE
BRITTANY GRAHAM

SPECIES ID

WILLIAM WALKER
BRUCE MUNDY
RICHARD YOUNG

THANKS!!

FUNDING PROVIDED BY

PELAGIC FISHERIES RESEARCH PROGRAM (John Sibert)
ECOLOGY, EVOLUTION, AND CONSERVATION BIOLOGY