

Welcome to *PolarConnect*



With Alex Eilers and
the Weddell Seals in the Ross Sea

9 May 2016

Getting to Know Adobe Connect

Slides will be shown here

Exit presentation

Mute your speakers

Raise your hand

List of all participants

Follow the chat

Find out more about the presentation

Chat here



Participant Introductions

**In the Chat box, please introduce yourself
by typing in your:**

- ✓ Name
- ✓ School/ Institution
- ✓ The number of students and adults participating with you in the same location

What is PolarTREC?

PolarTREC is a professional development experience in which K-12 teachers are paired with researchers for 2-6 week research experiences in the polar regions.

Teachers from around the United States will join scientists in the Arctic and Antarctica to learn about science, the polar regions, and to share what they have learned with their students and communities.

Questions

During the Presentation:

- Type your question in the text chat box

At the End of the Presentation:

- Raise your hand with the “hand button”.
- PolarTREC staff will call on you and activate your microphone.
- Speak loud and clear, directly into the computer microphone or the phone to ask your question.

Celebrating Weddell seals - 2016



Where are we?



Antarctica

Ross Island

McMurdo Station

The Team



**Dr. Jennifer Burns, UAA
Principal Investigator**



**Michelle Shero
UAA, Post-doctoral
Researcher**



**Skyla Walcott
UAA, Graduate Student**



**Roxanne Beltran
UAA, Graduate Student**



**Amy Kirkham
UAA, Graduate Student**



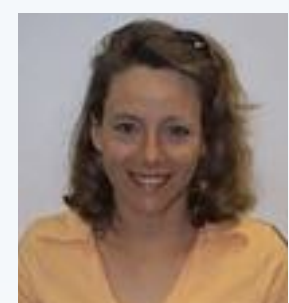
**Dr. Rachel Bergartt,
Veterinarian**



**Dr. Robert McCorkell,
Veterinarian**

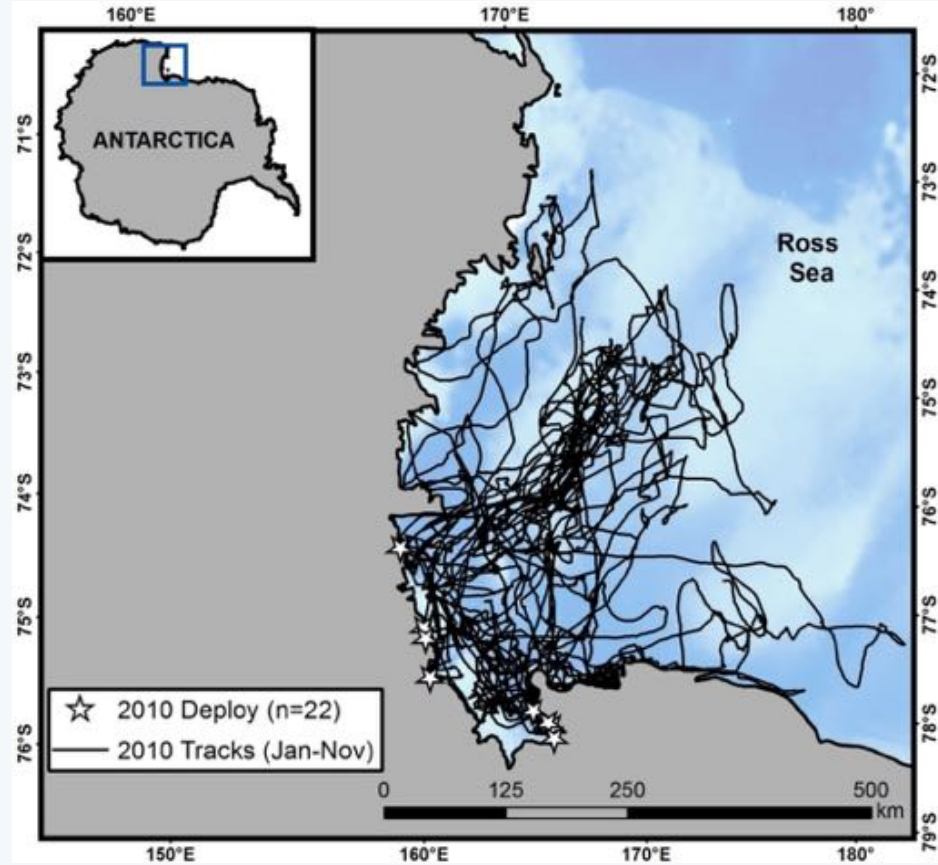


**Dr. Gregg Adams,
Veterinarian**



**Alex Eilers,
Educator**

2012 Project



**2012 project sparked the question for
our current project.**

The Cost of a New Fur Coat

Not Molted



Molt Status

Molted



Partial



Pup Yr1 → Molt Yr1 → Pup Yr2

Field work begins!

Looking for our seals:

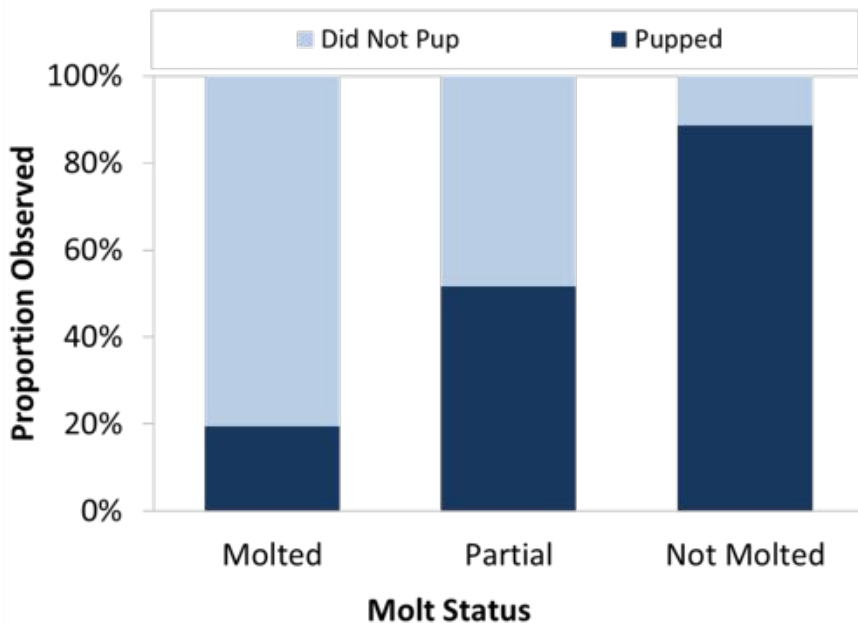
- Early moms
- Skip females
- Late moms

Across Season Links

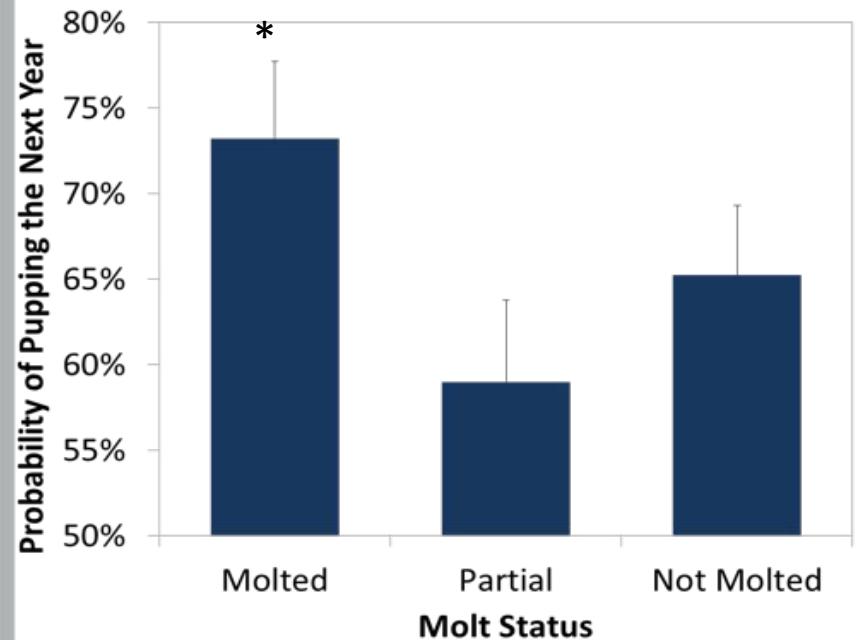


Pup Yr1 → Molt Yr1 → Pup Yr2

Within Season Links



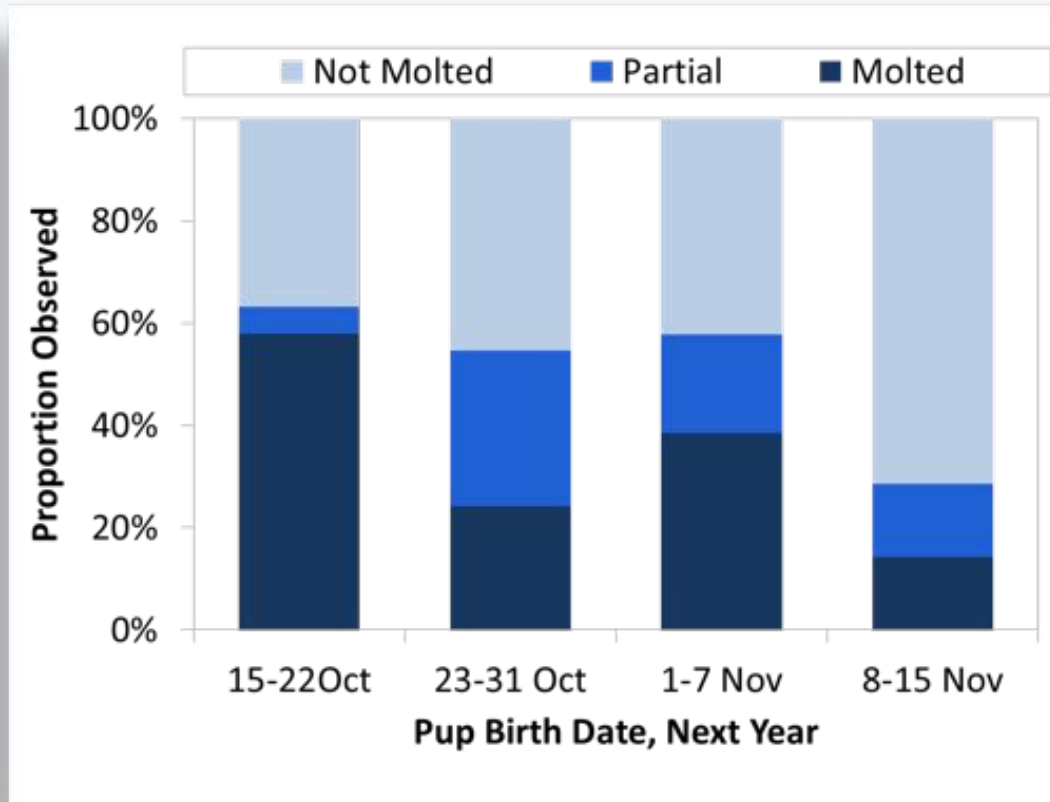
Across Season Links



Pup Yr1 → Molt Yr1 → Pup Yr2

Pup Yr1 → Molt Yr1 → Pup Yr2

Timing of Pupping in Year 2



Pup Yr1 → Molt Yr1 → Pup Yr2



Research Questions

- How do mass, condition, hormone levels, and activity budgets change seasonally in reproductive and 'skip' females?
- When does active gestation start, and what factors influence pregnancy success?

Field work!

Daily Snowmobile trips



Study Population



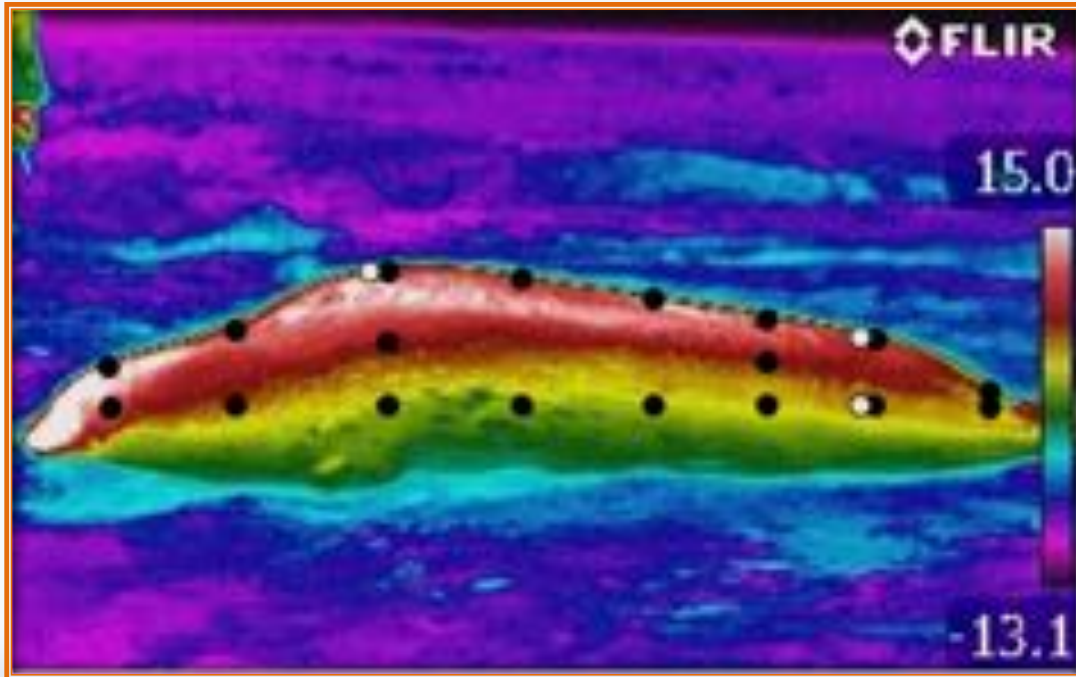
Capturing and Calming the Seal!



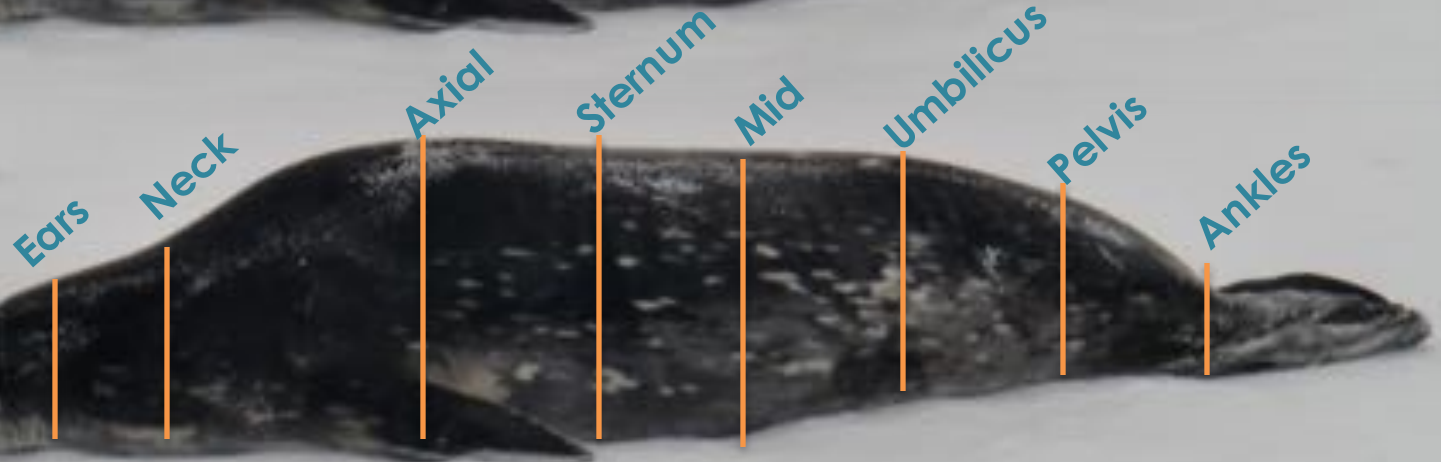
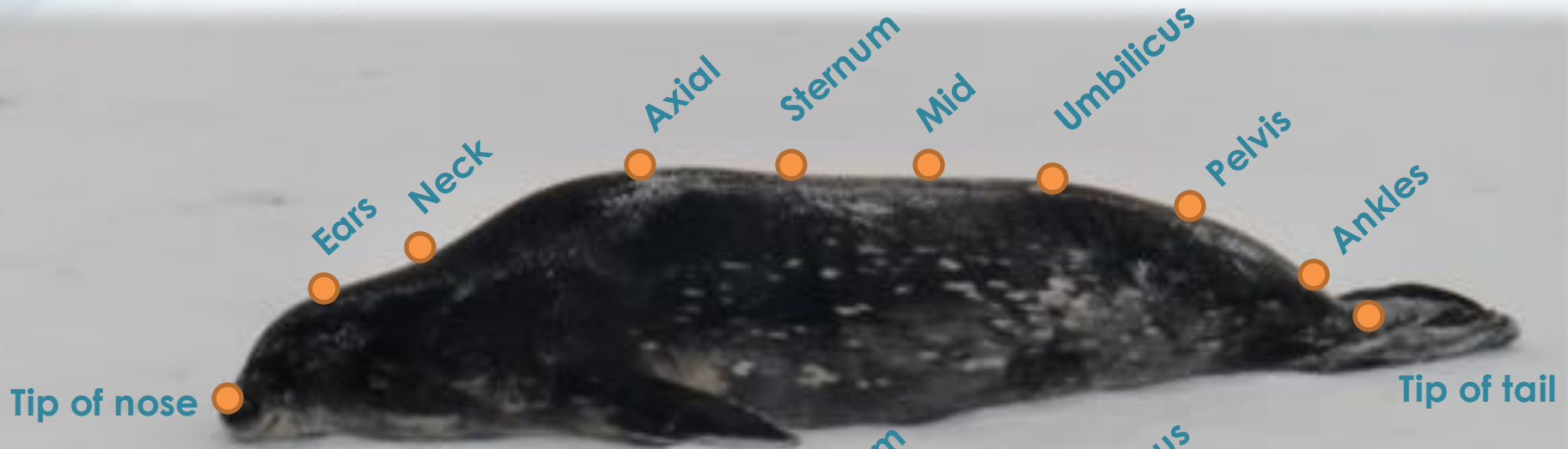
Weighing and measuring the seal



Skin temperature and heat loss



Measurement



Collecting samples...

Skin and Blood



Muscle and Blubber



Whiskers and Fur

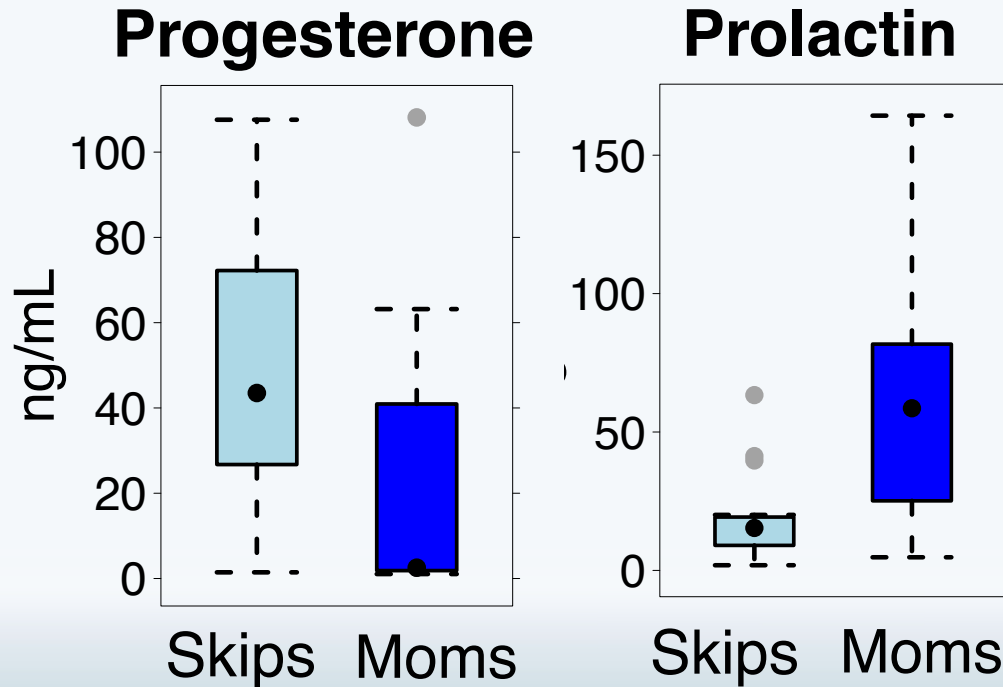


Samples: what we are learning

Oxygen stores



Hormones

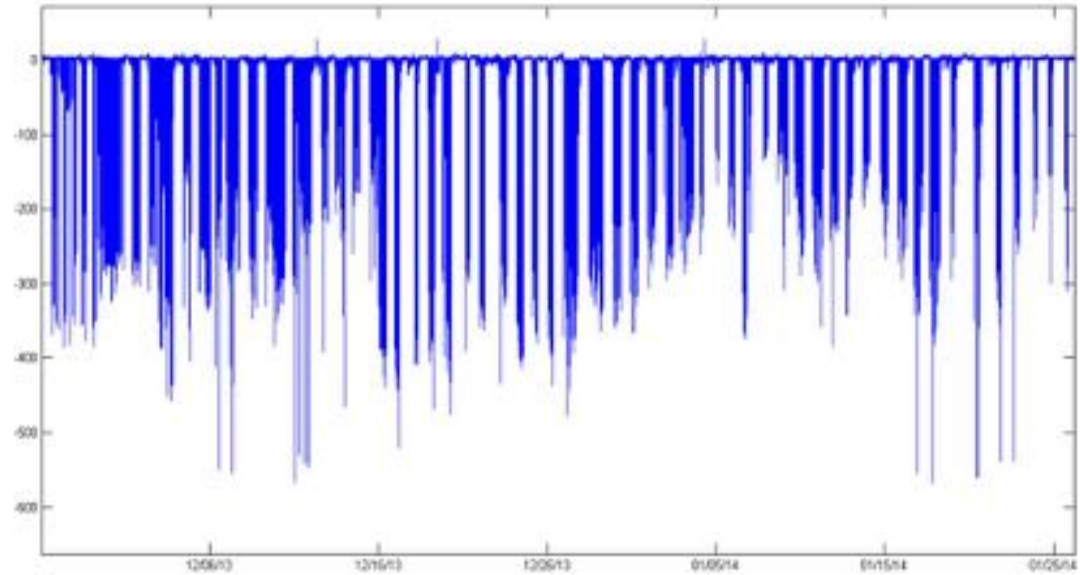


Hair growth

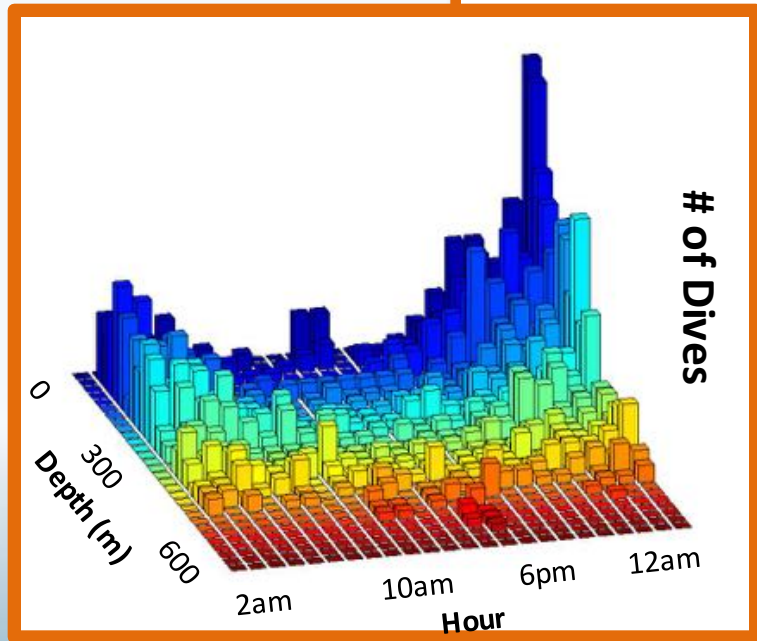
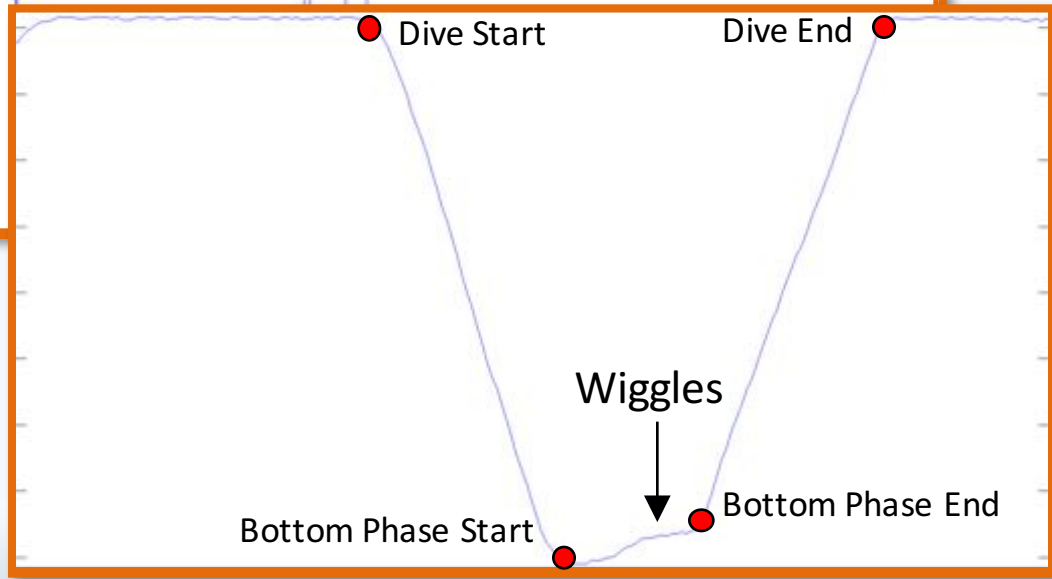
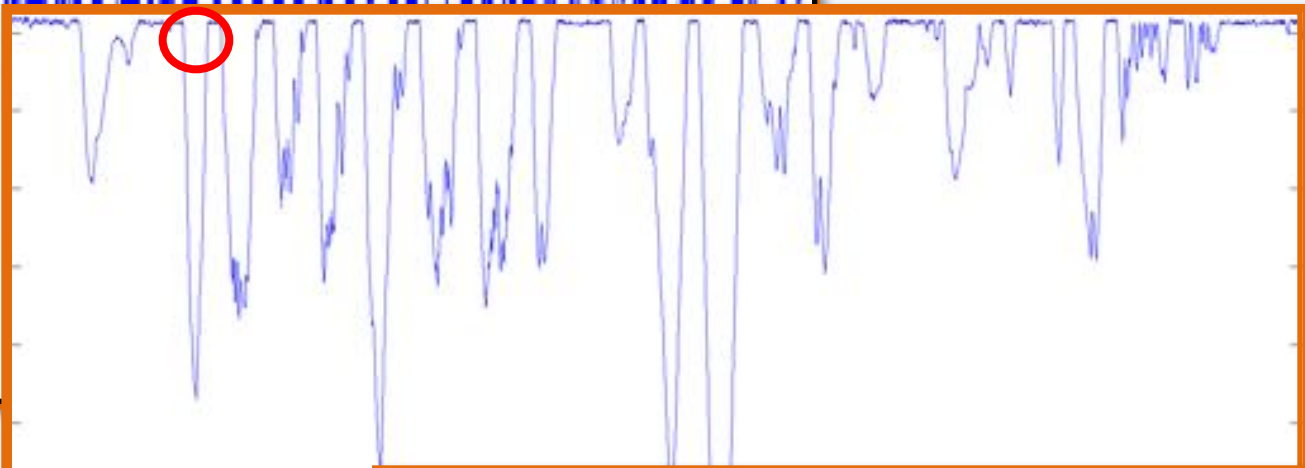
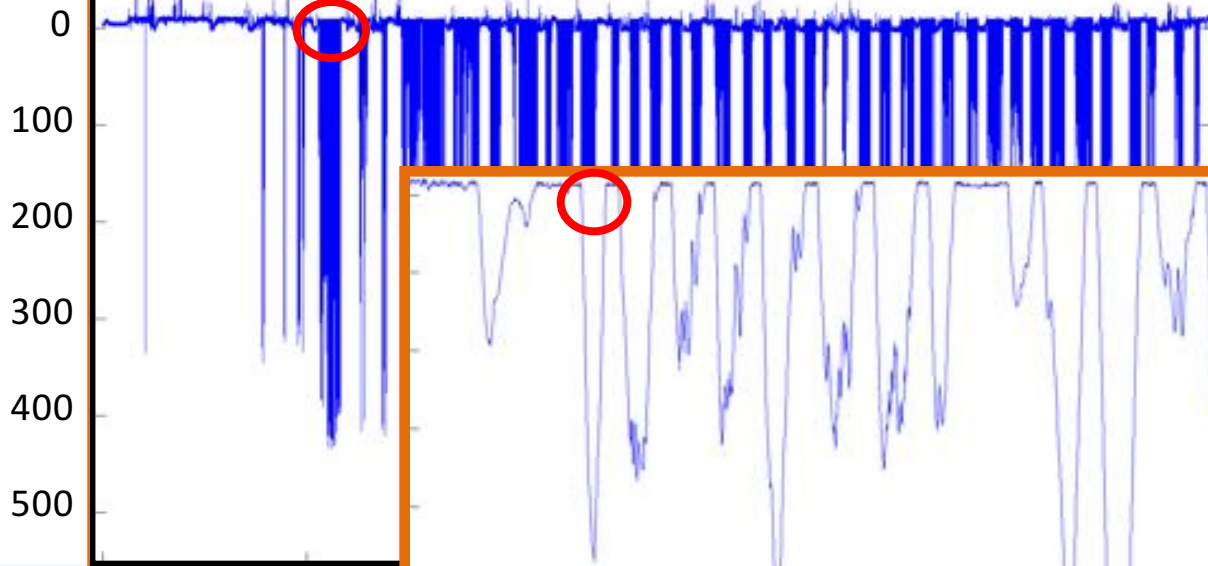


November/December

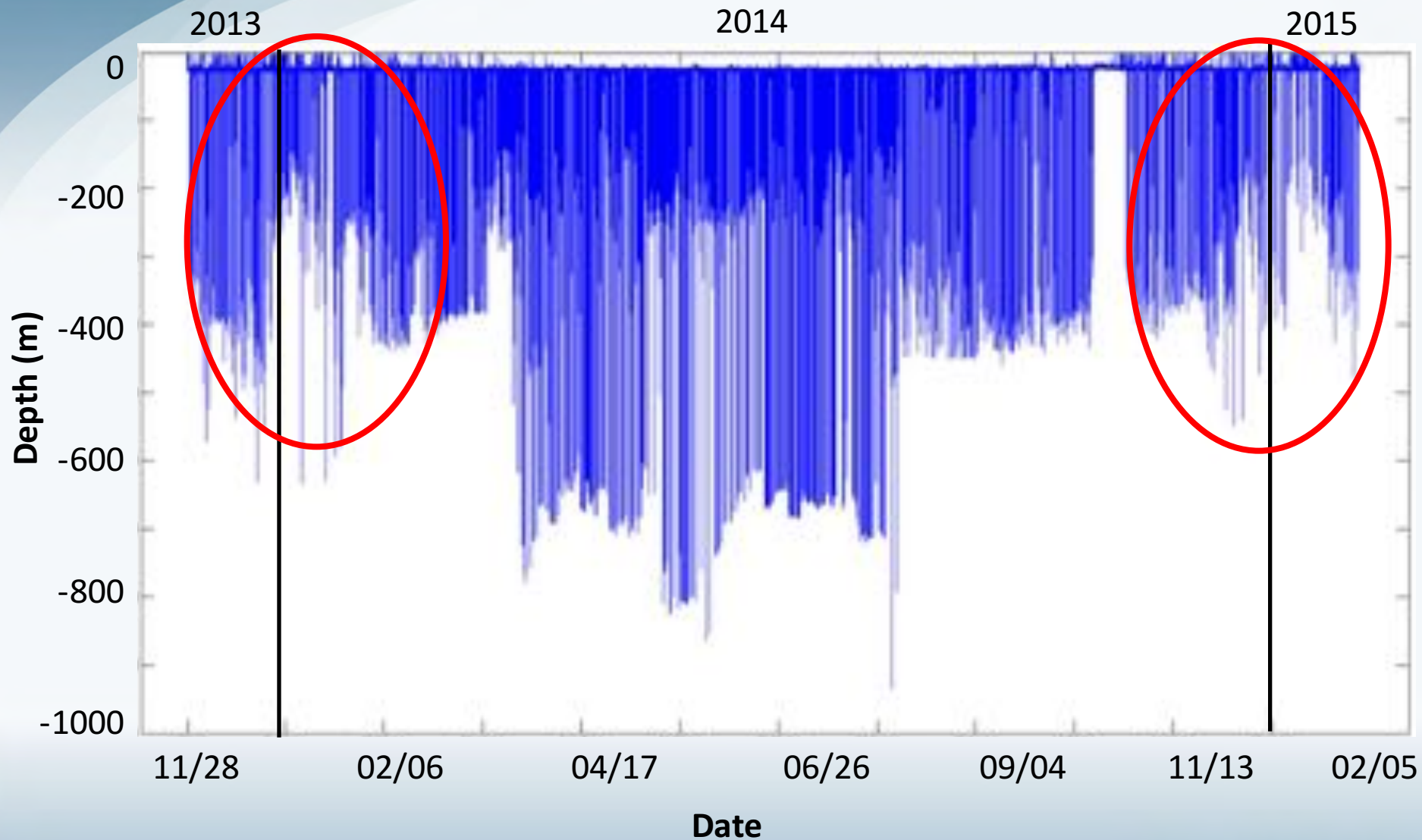
Tagging



Depth (m)



Dive Bouts



Looking for pregnancy

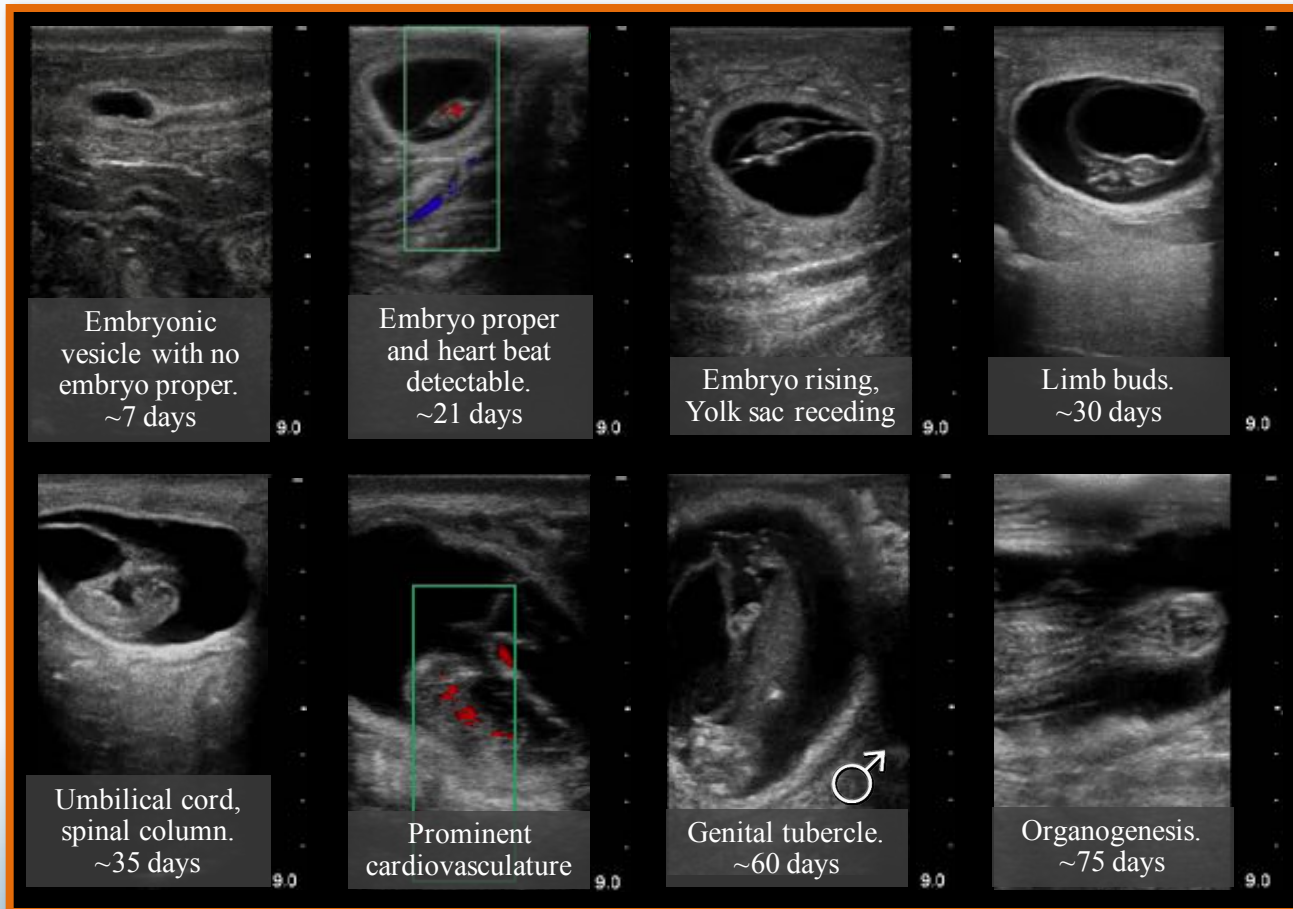


**With an
ultrasound**

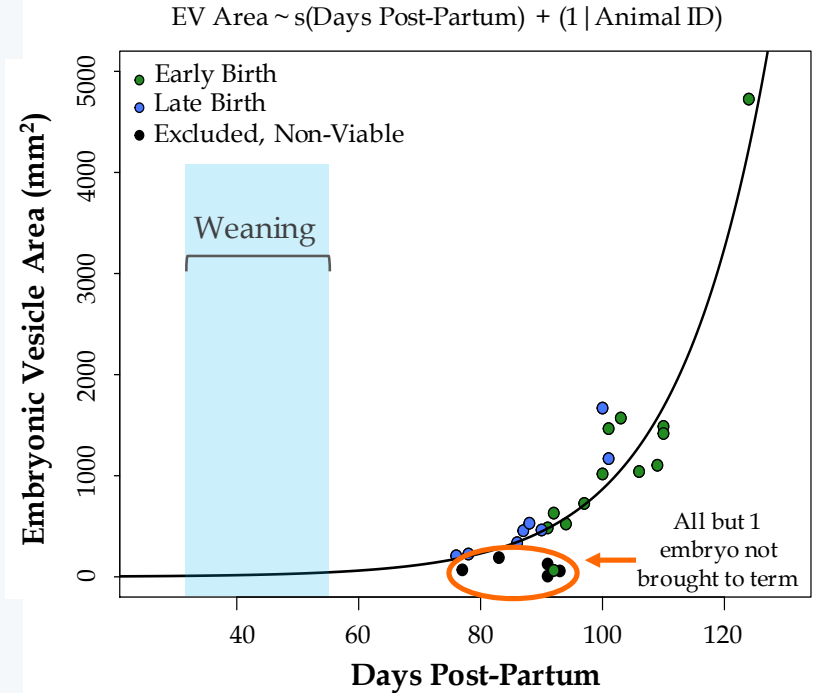
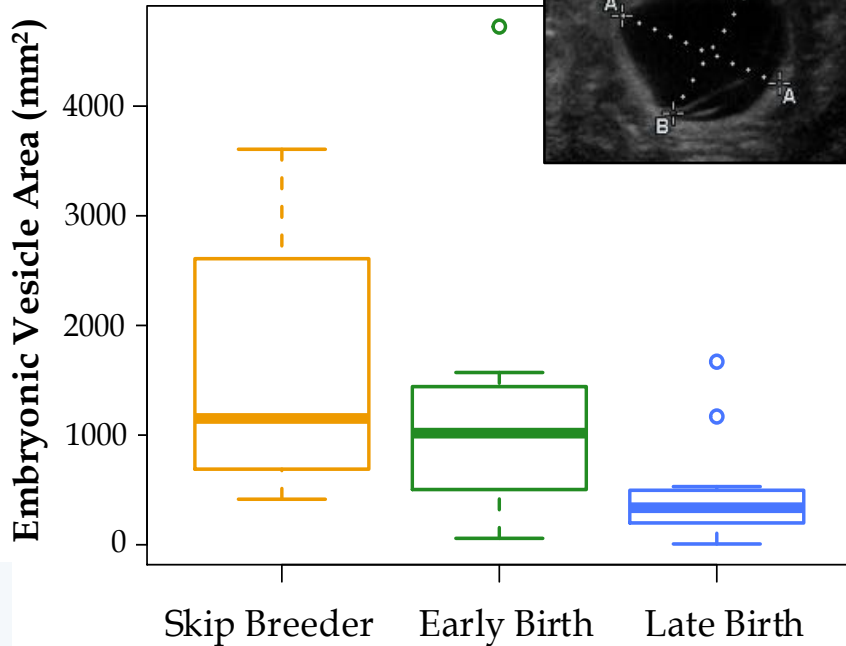
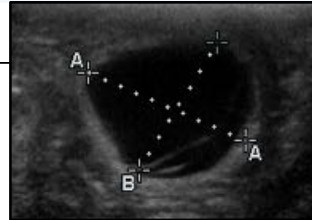




Pupping Breeding Molt



Embryo Size



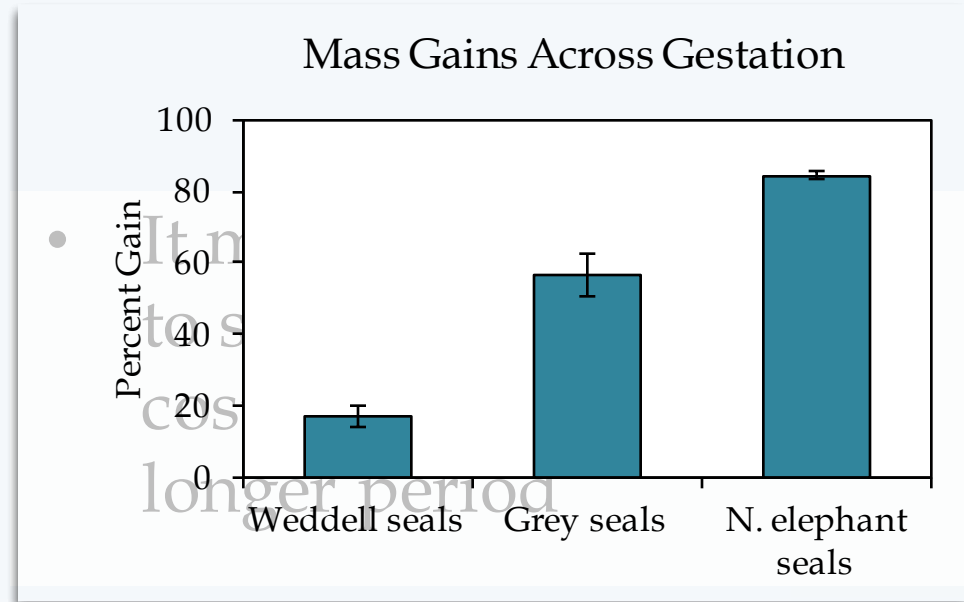
Do Weddell seals have Diapause?

Short (or no) Diapause → Longer Pregnancy

Pupping Breeding Molt



Species	Active Gestation Length (months)
Harbor seal	6-10
Baikal seal	6-8
S African fur seal	6-9
S. elephant seal	7-8
Ringed seal	7-8
Subantarctic fur seal	7-8
Hooded seal	7-9
Crabeater seal	7-9
Northern fur seal	7-9
Grey seal	8
Steller sea lion	8
Bearded seal	8-10
Leopard seal	8-10
Harp seal	8-9
Weddell seal	10
Ribbon seal	9
Australian sea lion	13-14



Shero et al. 2015



Beck et al. 2000



Crocker & Costa, in prep

Classroom Activities

Table of Contents

- Introduction
- Lesson 1: Mapping
- Lesson 2: Food Web
- Lesson 3: Diving
- Lesson 4: Measurement
 - Field Data Sheets
 - Seal 'Licenses'

E-mail Alex at

alex.eilers@memphistn.gov

Educational Journals at:

<http://www.polartrec.com/expeditions/weddell-seals-in-the-ross-sea-2016>

B-292  **Galaxy**

Season: November/December 2014

Weddell seal ID: WS14-01 Date: 1/26/2014

Flipper Tags: (R) 8058A (L) _____

Colony/Site: Turks Head

Female Repro Group: Skip Breeder / **Early Mom** / Late Mom

Overall condition/comments: _____

Crew: _____

Weighing EM = 504(seal length) + 0.085(seal length) + 1.407(seal mass) + 0.0346(seal length) - 580.074

Female Mass: 314 kg Expected Mass (EM): _____

Female Tare: 9 kg Difference between EM and AM: _____

Female Actual Mass (AM): 305 kg

Molt Status

Molt Code: 0 1 2 3 4

Measuring

	Girth	Height	Width	Dorsal Curve
Tail				
Ankle	75	19	36	24.5
Pelvis	127	28	51	59
Umb.	166	33	64	88
Mid.	174	34	70	111
Sternum	176	38.5	61	142
Ax.	165	38.5	55	171
Neck	128	23	50	201
Ears	75	20.5	24	224
Nose (total)				245.8 (cLength)

Standard Length (sLength): 228

Thank You!



Extra slides







Birds of Antarctica

Questions

- Raise your hand with the “hand button”.
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TEACHERS AND RESEARCHERS
EXPLORING AND COLLABORATING

Teachers: Join PolarTREC!

www.polartrec.com/about/join

Every teacher can participate in different ways:

- **Following Expeditions**
- **Participate in PolarConnect Events**
- **Join the Polar Education Email List**
- **Become a PolarTREC Teacher!**



TEACHERS AND RESEARCHERS
EXPLORING AND COLLABORATING

Upcoming Events

Watch for and register for upcoming
events at [www.polartrec.com!](http://www.polartrec.com)

Thank You!

*An archive of the event will be posted online shortly at
<http://www.polartrec.com/polar-connect/archive>*

