

Update #3 – Establishment of Muscle Beach

Since our last update we have placed the finishing touches on the laboratory as well as conducted several excursions away from McMurdo Station in order to establish a



The Views from our lab window in McMurdo are absolutely amazing. Above: Pictures of Mt. Discovery on a sunny and a sunset over the mountains; and below: views of the Royal Society range with the C17 plane on the sea ice runway.



working field site out on the ice. The lab facilities here at McMurdo are fully functional and we have some amazing views directly outside our window. Upon our arrival in McMurdo, the staff here had already started to stock the lab with all the chemicals necessary to carry out our analysis. This past week, we placed the finishing touches on the lab by adding the remainder of the equipment (microscopes, pH meter, glassware, gel boxes, centrifuges, scales, etc.) we had requested that will aid us in our research.

In order to establish a strategically placed field site (we affectionately call this location “Muscle Beach” since we are studying the diving capacity of the seals’ muscles among other aspects of diving physiology), we took several trips in our Matt-tracks vehicle and snowmobiles to an area known as the Dellbridge Islands in order to locate seals. Drs. Shane, Steve and Linnea also fly in a helicopter to locate other animals as well as find where the sea ice edge is this year. As we set out into the field to find the perfect site for “Muscle Beach”, we were looking for an area close to ice cracks where seals normally congregate since they have access to the water in these areas. Our goals are to work with the adults and juveniles in late October and the weaned pups in late November in the same area, so we were looking for a site that would have a good mixture of adult males and pregnant females.

Luckily, we found a decent number of seals around Tent Island, one of the Dellbridge Islands. Tent Island is approximately 12 miles north of McMurdo Station. Thus, Muscle

Beach was established tucked in behind Tent Island and we will base our field operations from there.

After setting up the “fish hut” and flagging the road, we were finally ready to get to the work at hand, sampling seals. The day following the establishment of Muscle Beach all 5 ice team members set out for the field site. Our normal operation is for 3 people to leave in the Matt-tracks with all the equipment about a half hour before the other 2 leave on snowmobiles; since the snowmobiles are so much quicker. The draw back to the snowmobiles is that it is a bit cooler than riding in the Matt-tracks. After rendezvousing at Muscle Beach, the snowmobiles did a quick scouting trip and found an adult male that was suitable for us to sample. The male weighed 326 kg. We collected our samples and measurements from the seal and even though several members of the team were new to the procedure, all in all everything went smoothly. We were finished in about 40 minutes, and then two team members raced back to the lab in McMurdo on snowmobiles. In tow Dr. Shane and Linnea had a small muscle sample in a vial on ice, and they were going to try and culture (or grow) some of the cells from that bit of muscle. They had to rush back to the lab to try and get the cells to grow. Why do you think it was important for them to rush back to the lab?

All in all it was a great week; we were happy: the ice team had our first samples!

Check out some of the pictures below and have fun with this week’s challenge question .



Sea ice hole with and without seal.



Members of the ice team (Shawn, Steve and Linnea from top to bottom) check out pressure ridges and cracks in the ice around Tent Island.



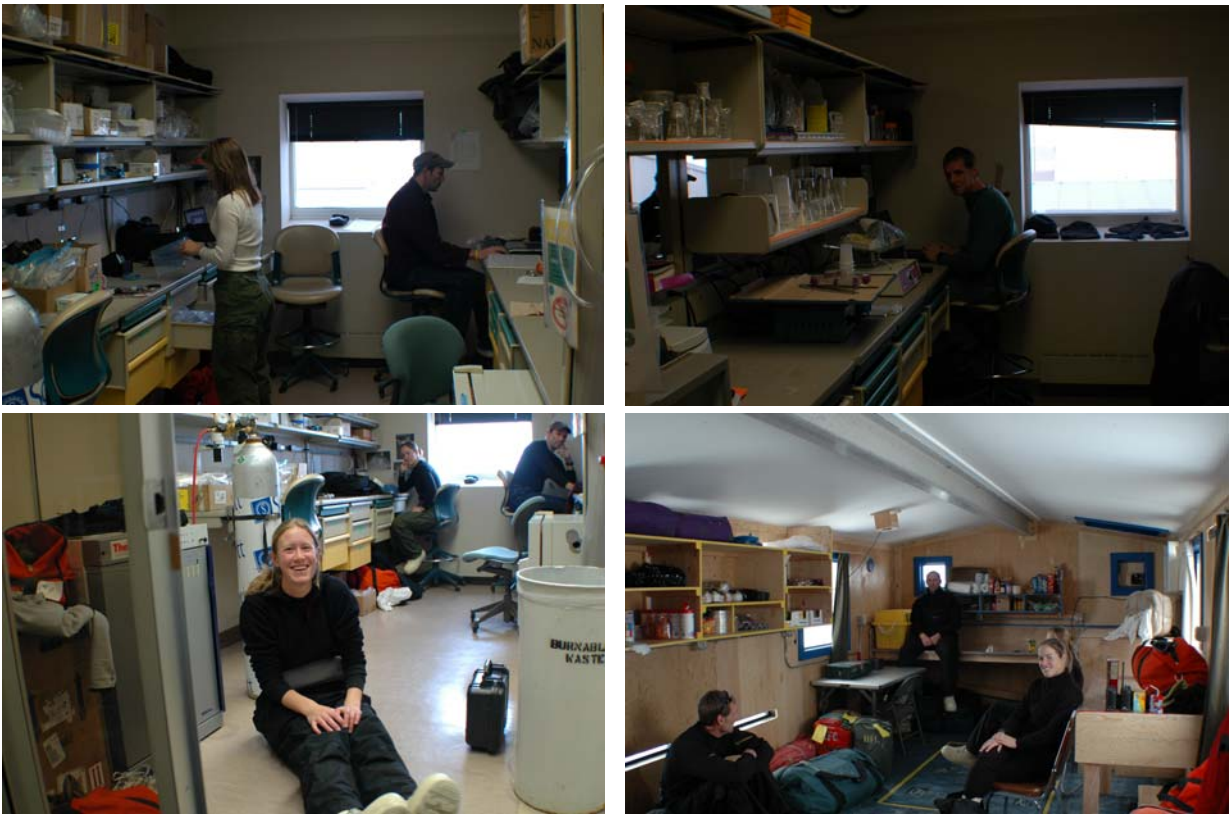
A view of Tent Island on the right and Inaccessible Island in the background with Weddell seals in the foreground.



On Sunday we set out to find the perfect spot to set our field base. Here are Linnea, Jay and Steve standing by the flags marking the site for Muscle Beach.



Vehicles used in the field: Snowmobiles on left and Matt-tracks along side our fish hut on the right.



Muscle beach crew in the lab at Cray and the field.

Challenge question:

- A. So why is it easier for seals to maintain breathing holes closer to islands or natural cracks than in the middle of the sound?
- B. Pictured below is a Weddell seal, since they have such short front flippers, how do they maintain a breathing hole?

