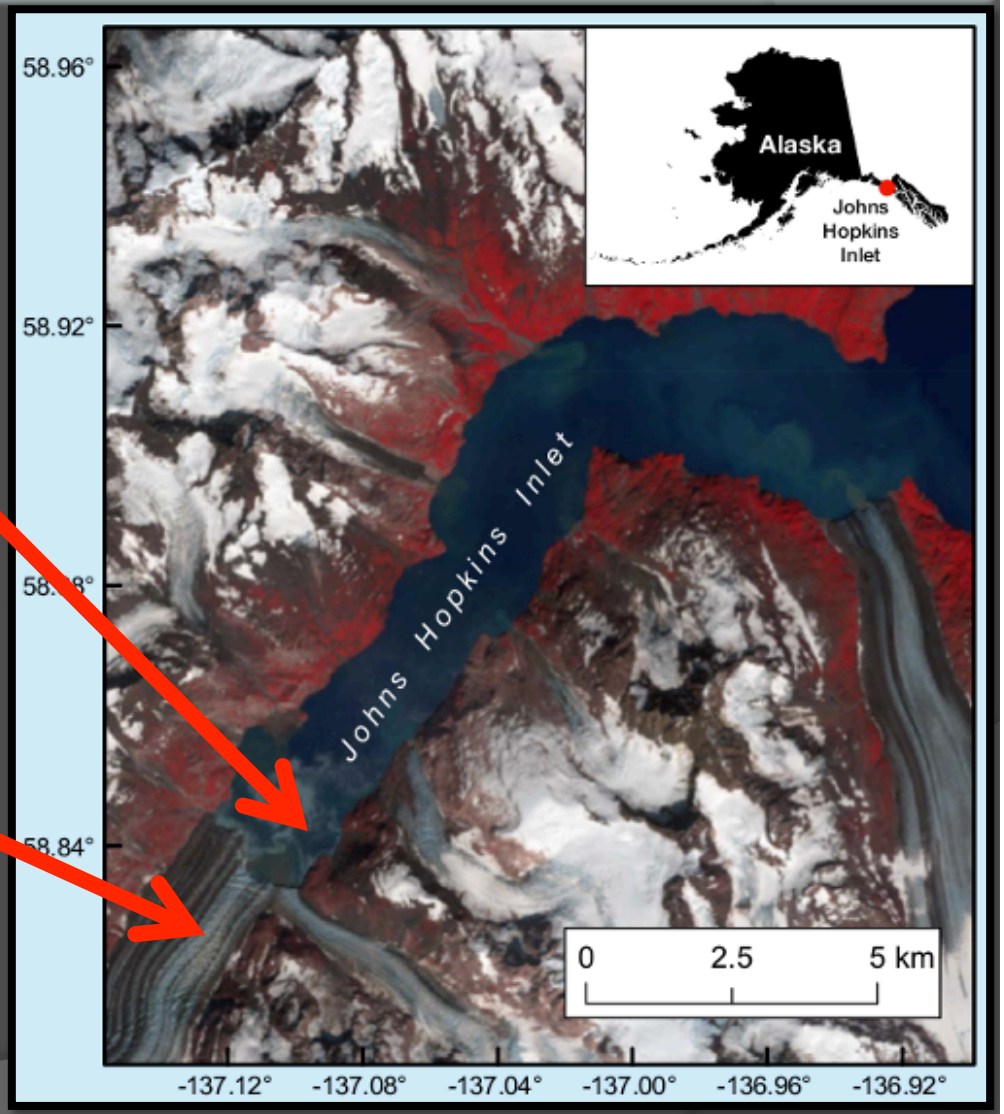
FLIR DATA ANALYSIS OF THE RELATIONSHIP BETWEEN ICE TEMPERATURE AND BODY TEMPERATURE OF HARBOR SEALS IN JOHN HOPKINS INLET, ALASKA

By: Emily Pendergrass

Why Do We Care?

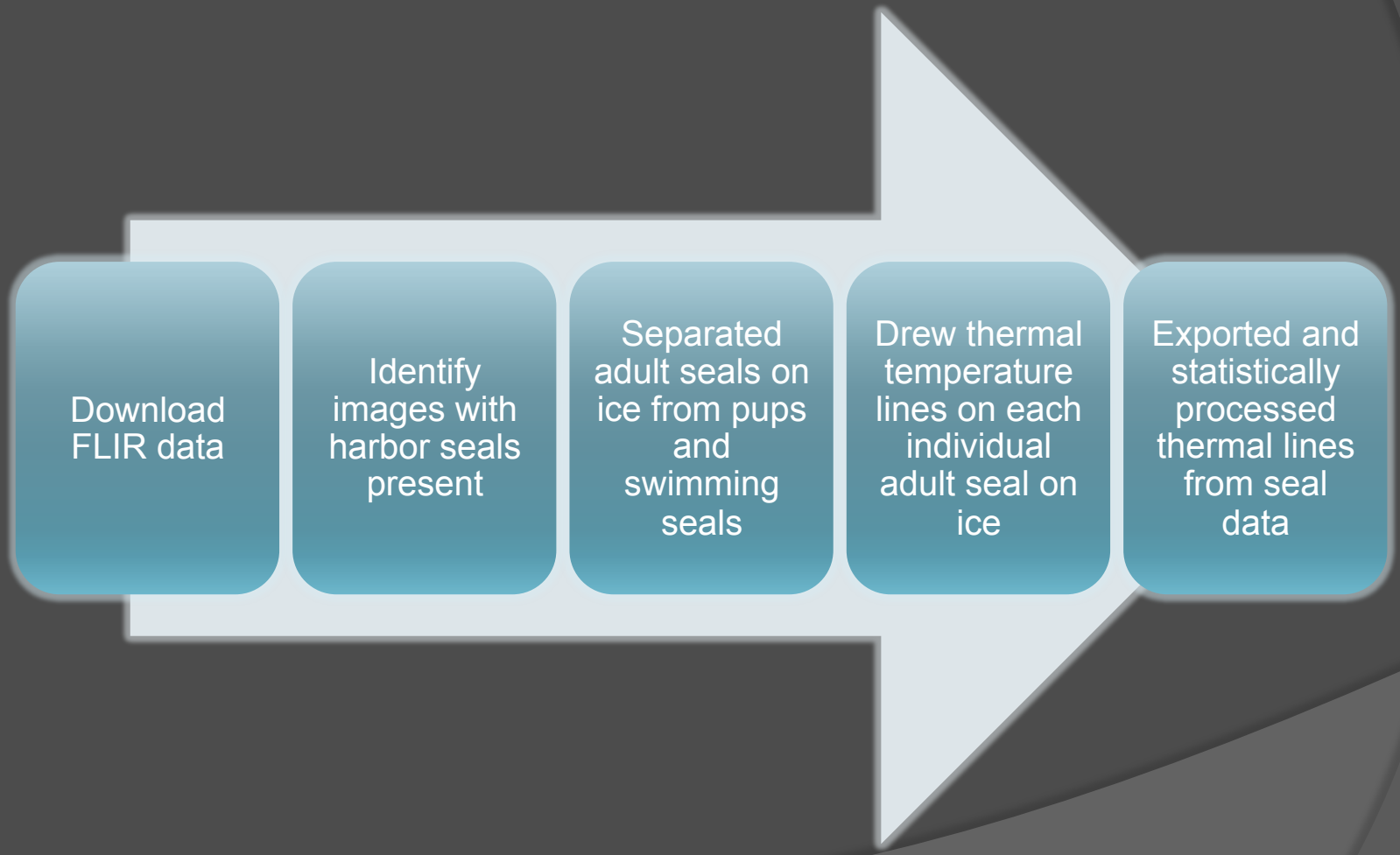
- Very little information on these animals
- Very little is know about their habitat preferences
- Global warming is destroying ice related habitats

Study Area

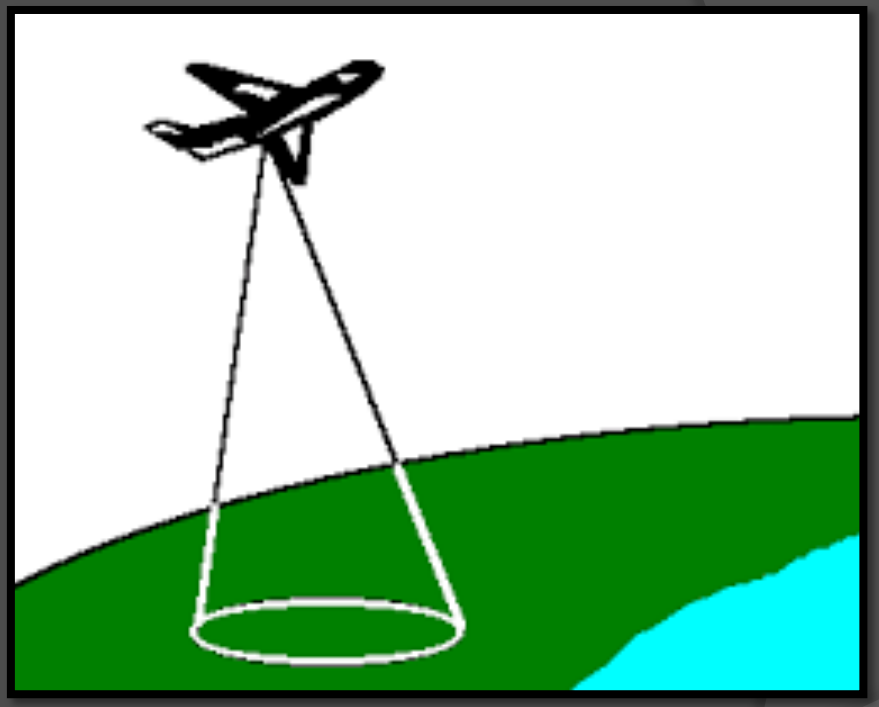


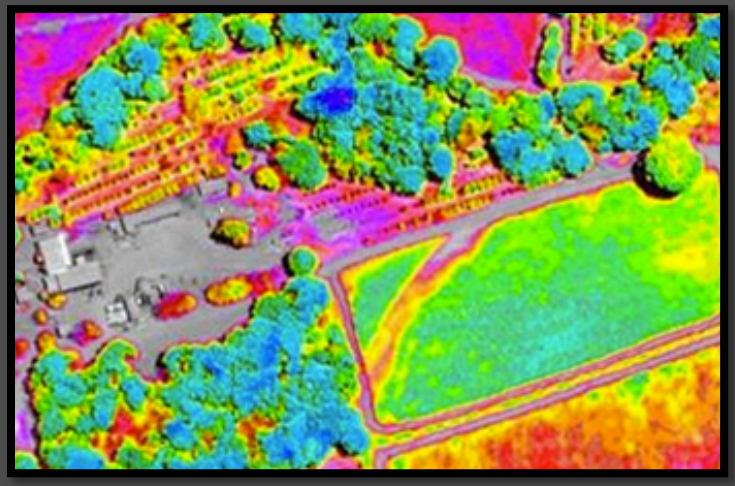
Map source: http://harborseals.alaska.edu/contacts.html

Work Flow Chart



FLIR Data





Thermal Harbor Seal Images

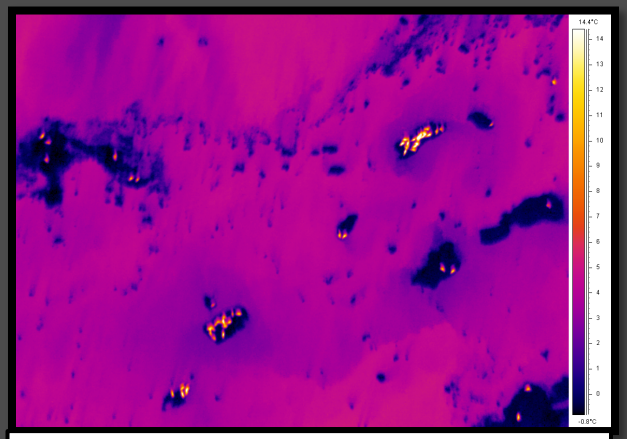


Image 1

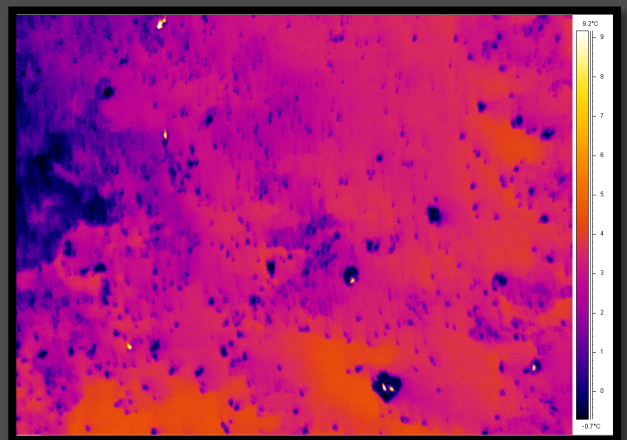


Image 2

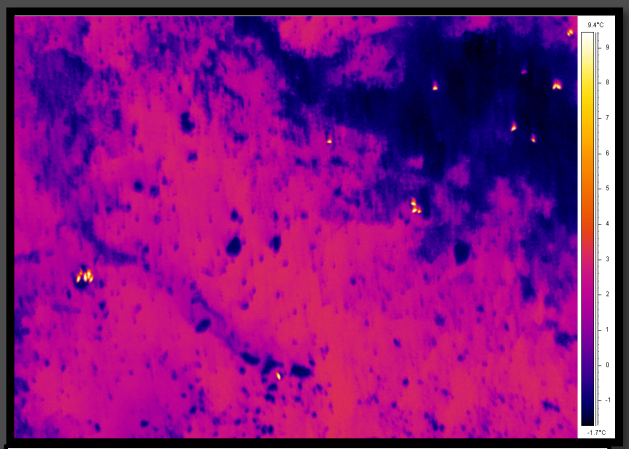


Image 3

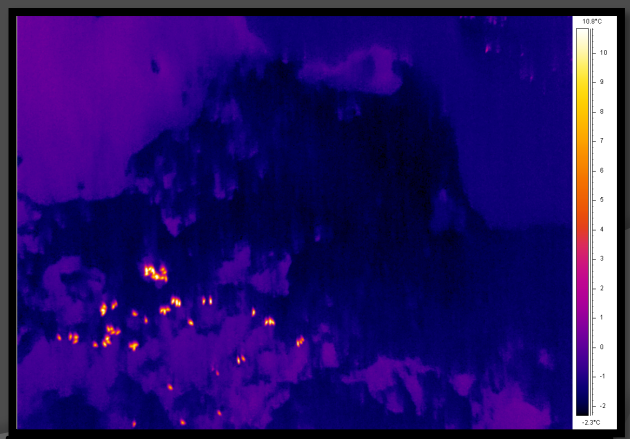


Image 4

Infrared Harbor Seal Images

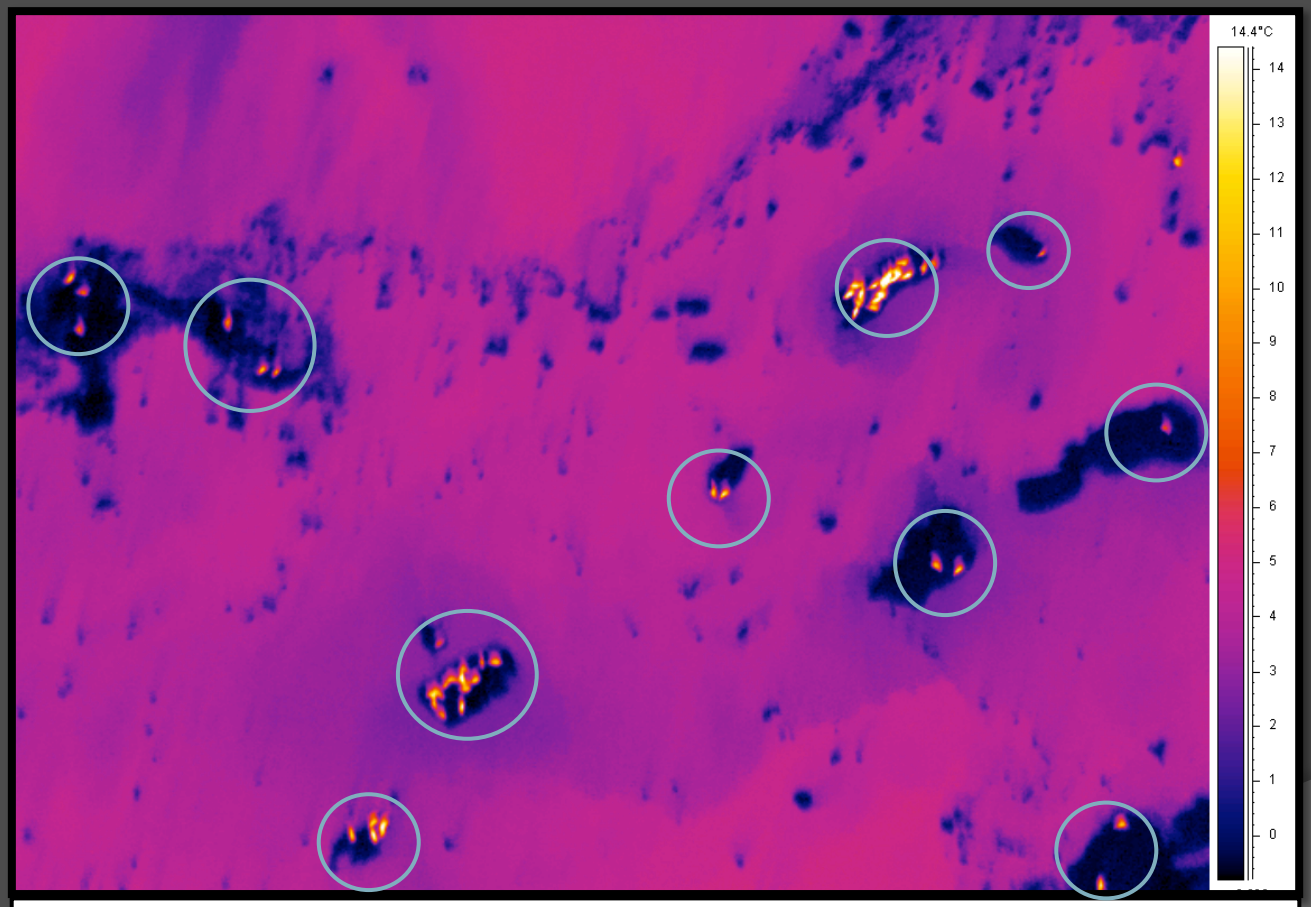
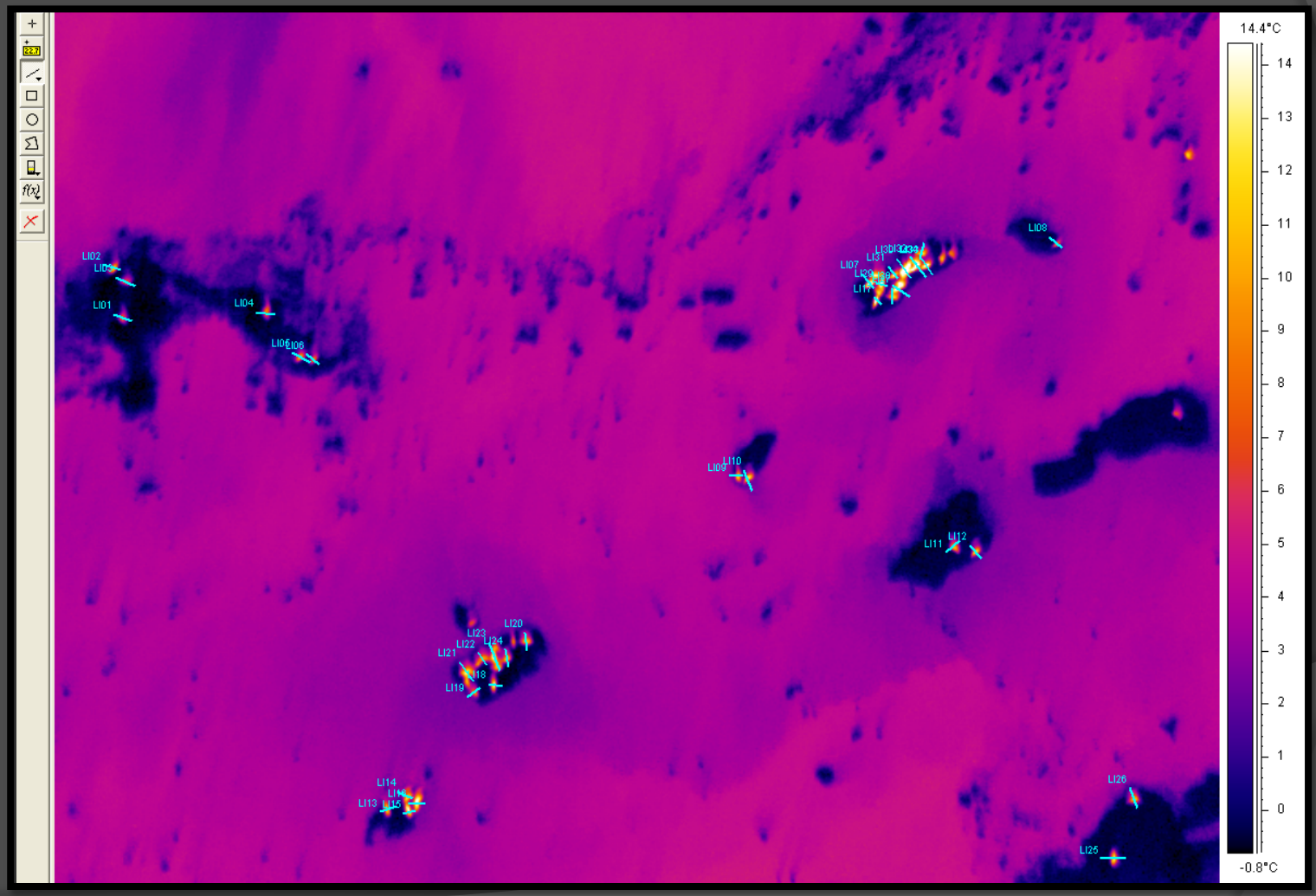
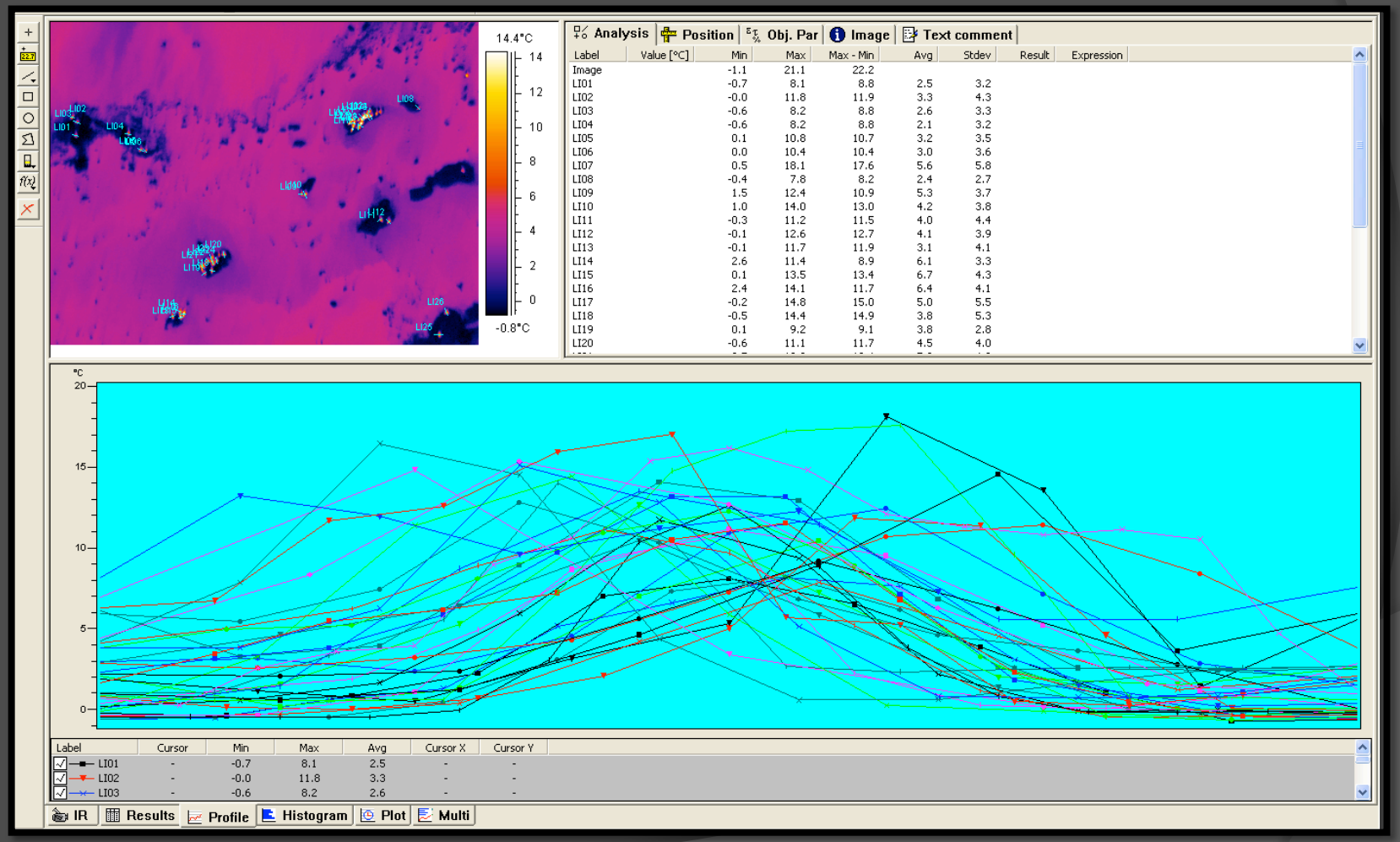


Image 1

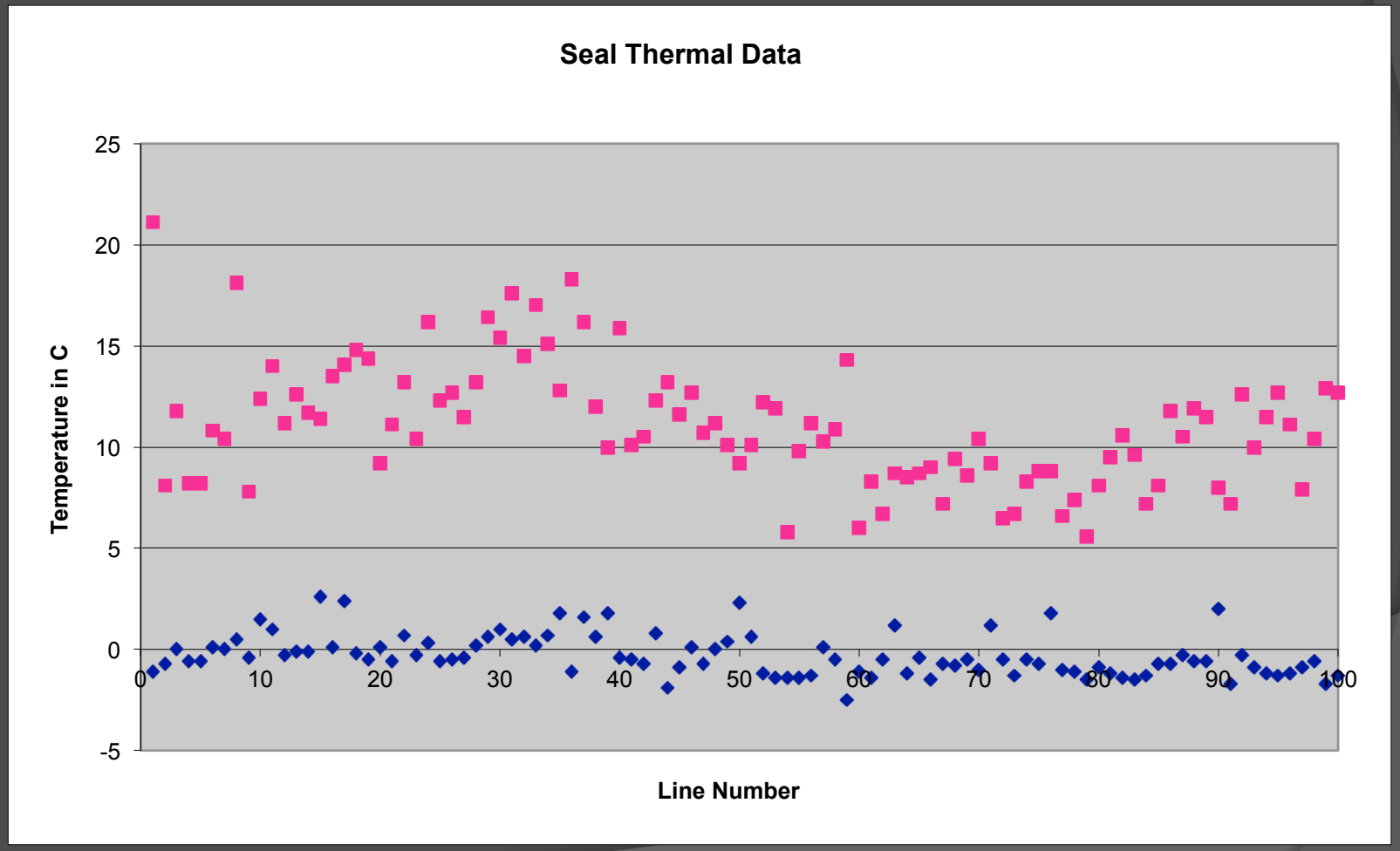
Drawing Thermal Lines



Data Analysis



Data Results



Conclusion

- This data shows that there is a threshold (at about 5 degrees Celsius) between the body temperatures of the seals and the ice temperature of their habitat.
  - This could be used in the future to separate out all of the seals from the data via supervised classification of FLIR temperatures.

Future Questions

- Correlation between measured external body temperature and actual seal mass
- Does sea ice have a specific size to temperature ratio or threshold

References

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Acknowledgments

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Questions