Please share with others as needed…

The FWS Arctic LCC has been working with Matthew Sturm (UAF) and Frank Urban (USGS) to identify a preliminary study to gather information on snow depth in the Arctic National Wildlife Refuge 1002 area. Matthew was able to secure funding to fly LiDAR and Structure for Motion imagery over a select area of the coastal plain, and now we are looking for feedback on areas of interest. We see this as an opportunity to have data at three scales for a point in time (April 10-19, 2018): ground measurements, aircraft based imagery and satellite remote sensing data, to give us some quantitative information to inform further discussions. Our goals are two-fold: 1) To work with you all to determine if we can refine existing models or work with to create new models that annually identify snow drifts with highest probability to create potential polar bear denning habitat; and 2) to establish how to monitor for minimum snow required for winter tundra travel to protect taller stature vegetation (tussocks and shrubs) in the 1002 area during exploration and development.

Frank Urban would lead the ground survey team by snowmachine while Matthew and Chris Larson fly. Frank has three remote snow/temperature monitoring stations on the 1002 Coastal Plain, including Camden Bay, March Creek and Niguanik. They have proposed the following for the snow survey, but are looking from feedback on what areas would be of interest:

Are there any priority areas in the 1002 area that you would want to see mapped for snow depth? with the budget we have, and time, we can cover two 15 by 4 km swaths. Our current plan is to lay these over areas that we measured in 2014 with some measurements in 2015. One swath would be from Camden Bay south to Marsh Creek; the other from just south of Kaktovik SE to Niguanik. If there is some other location that has high priority please let us know.

Our field protocols emphasize the collection of a large number of snow depth values, which allow us to proof the structure from motion snow depth maps. we will also collect some snow stratigraphy and density, which will allow us to convert depths to water and to think about over-snow trafficability issues. Other aspects of the snow of interest?

I would be grateful for your feedback based on your knowledge and experience with polar bear denning to identify the what might be useful. I understand that early winter snow depth is potentially more relevant to polar bear denning habitat selection, but I do hope that this information will help us understand general snow depth/redistribution patterns associated with topography. I will also be consulting the Arctic National Wildlife Refuge staff for other insights into terrain variation that could affect snow depth for winter tundra travel.

Thank you in advance for your time. I know that those of you from USGS are out in the field looking for bears, but I hope you'll have a chance to share your thoughts early next week or let me know what additional information you may need and when you might be able to reply.

Thank you,

Wendy

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