



# Improving Arctic Observing and Data Systems with the US Arctic Observing Network's (US AON) Benefit Tool



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## About US AON & Benefit Assessment

The US AON is a collaborative initiative focused on Improving Arctic observations to better support societal benefits like climate resilience, disaster preparedness and food security. US AON has developed its Benefit Tool and Assessment methods to inform more strategic, equitable, and sustainable investments in Arctic observing. It uses relevant societal benefit frameworks as a performance metric for evaluating and improving Arctic observing & data systems.

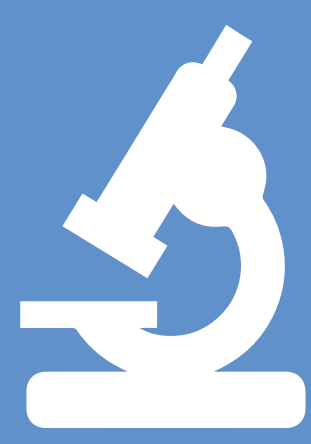
## How to Read a Benefit Assessment

Benefit Assessment diagrams, read from left to right, show how observing system inputs feed into data products then into applications, which ultimately provide societal benefits. Color coding indicates how well systems and products are performing (see key). Line thickness indicates the criticality of each input. Ratings are given for a particular context by an individual or small team.

### Benefit Tool User

### Use Case

### Examples



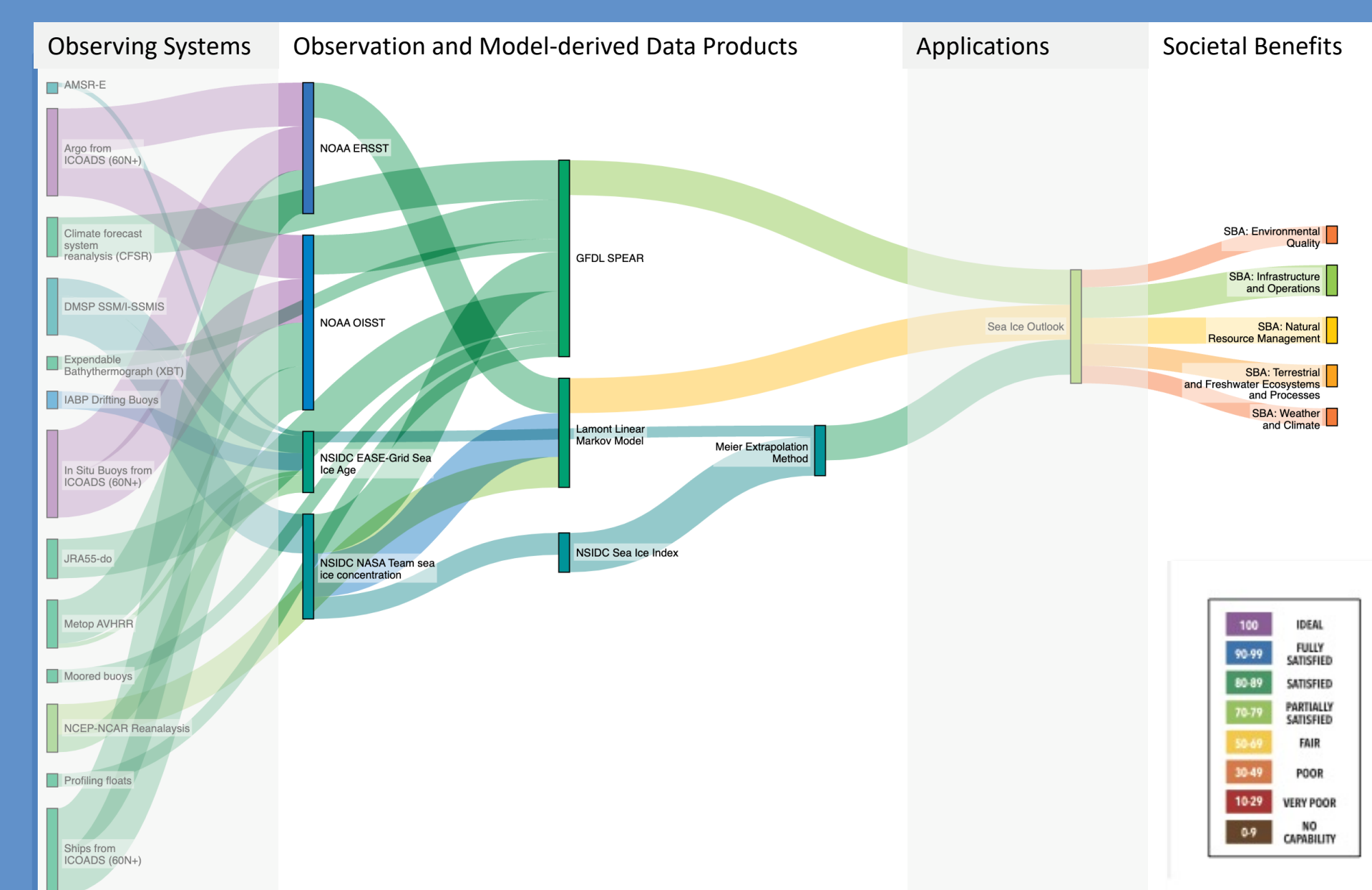
Scientific Research & Operations

Visualize how relevant applications or products are supported by observations and data products

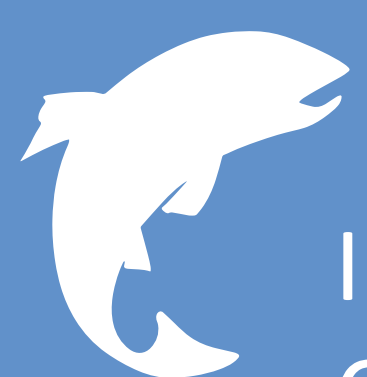
See how my data or observation system is being used

Demonstrate how my work supports societal benefit

Explore gaps that impact my work and design solutions that increase its impact



This case study (in review) was initiated by the Sea Ice Prediction Network 2 (SIPN2) to explore the similarities and differences of forecast initialization schemes used by diverse Sea Ice Outlook contributors in their September sea ice minimum forecast. As a learning network, SIPN2 values these visual storytelling tools and the role they play in improved understanding of S2S predictions relevant to infrastructure and operations.



Indigenous Communities & Northern Residents

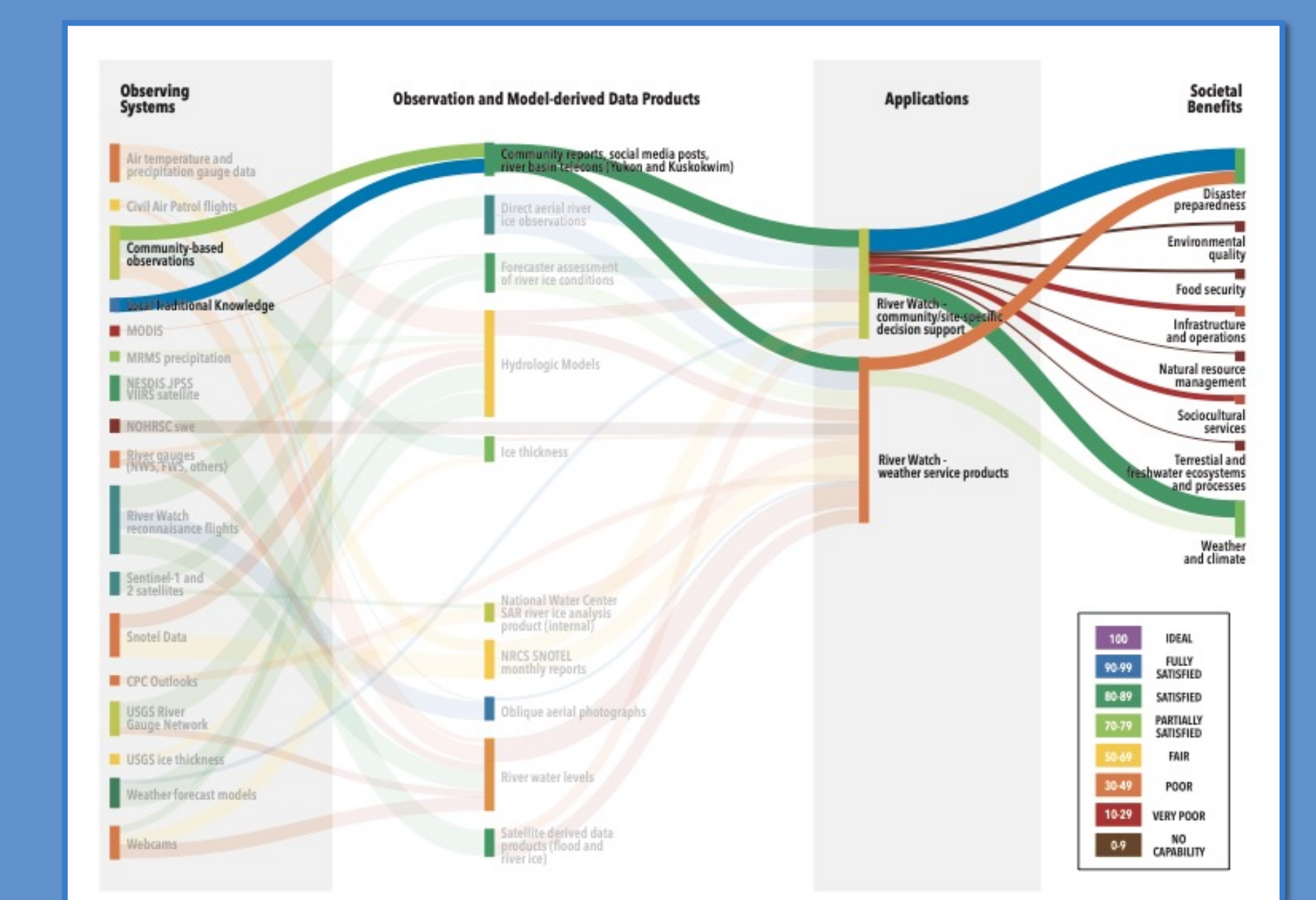
Provide user guidance for increasing the impact of new or existing tools

Discover tools that other community members are using

See where community-created observations and data systems are being used

Understand how my own observations and data can support societal benefit

The River Watch case study focuses on the complex observing system required for forecasting river ice break up in the Y-K region of Alaska. The highlighted system illustrates the value of engaging Indigenous expertise through culturally-relevant mechanisms like community-led observations and conference calls. The capacities contribute to better disaster preparedness than NWS products alone.

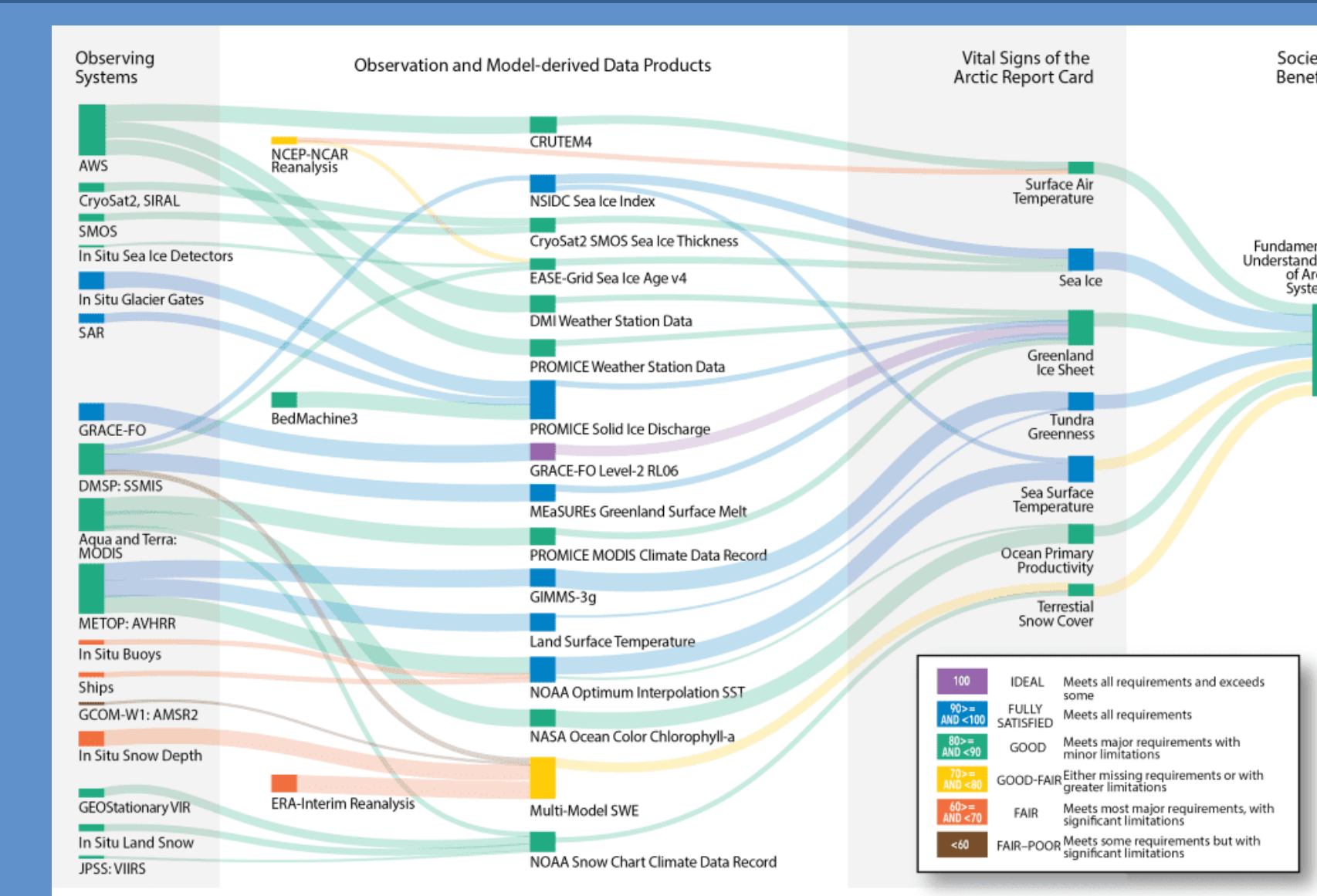


Research Program Managers & Policy Makers

See a broader view of the Arctic observing system and its impact

Demonstrate how my program supports societal benefit

Identify critical areas for new or sustained investment



This case study explores the observing and data assets that underpin the indicators featured in the NOAA-published annual Arctic Report Card. As a widely read and influential publication, its sponsors are interested in the needs to sustain key indicators and to fill observing system gaps to support the public's fundamental understanding of Arctic change.

## Adding Benefit with US AON

## Contribute to our Benefit Tool Development

1. Add to our growing library of registered assessment objects (QR code)
2. Create your own Benefit Assessment (QR code)
3. Partner with US AON to host a workshop featuring Benefit Assessment and dialogue around strengths, gaps, and opportunities

Contact [sandy.starkweather@noaa.gov](mailto:sandy.starkweather@noaa.gov) or [hazel@iarppcollaborations.org](mailto:hazel@iarppcollaborations.org)



Benefit Tool

GitHub paragraph: "The Benefit Tool system is developed with a community-driven approach on GitHub (<https://github.com/nsidc/usaon-benefit-tool>). We have already accepted code contributions from members of the public and welcome contributions in any form, technical or non-technical. If you'd like to request a feature, we welcome you to engage with us on GitHub Discussions (<https://github.com/nsidc/usaon-benefit-tool/discussions>). If you'd like to report a bug or submit an experience report, please open an issue (<https://github.com/nsidc/usaon-benefit-tool/issues>). And of course, pull requests are always welcome!