

Socio-ecological perspectives on expedition cruise tourism management in Svalbard



Photo: Alex Berger, CC.BY40

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Background

- Svalbard- undergoing rapid changes at multiple levels (Dannevig et al, 2023; Sokolickova et al, 2021)
- Ecosystems affected by multiple stressors
- Growth in expedition cruise around the Svalbard archipelago
- Governmental aims of strong environmental protection
- New environmental regulation led to massive local response

Research questions:

- a) How has the pattern of expedition cruise ship traffic changed between 2011 and 2022?
- b) What are the main arguments against the governments' environmental regulations that are putting a halt on expedition cruise traffic?
- c) what do the arguments imply in terms of the legitimacy of the regulations?





Summary of the new environmental regulations

- Only 43 landing sites for expedition cruises
- Maximum of 200 passengers, including in the protected areas in the west
- Ban on the use of drones
- New speed limits and distance requirements to protect bird and wildlife

<https://www.regjeringen.no/no/aktuelt/endringer-i-miljoregelverket-pa-svalbard/id3024960/>



Impacts of expedition cruise tourism on ecosystems

- Scientific knowledge about impact is generally lacking
- Higher ecosystem vulnerability under climate change

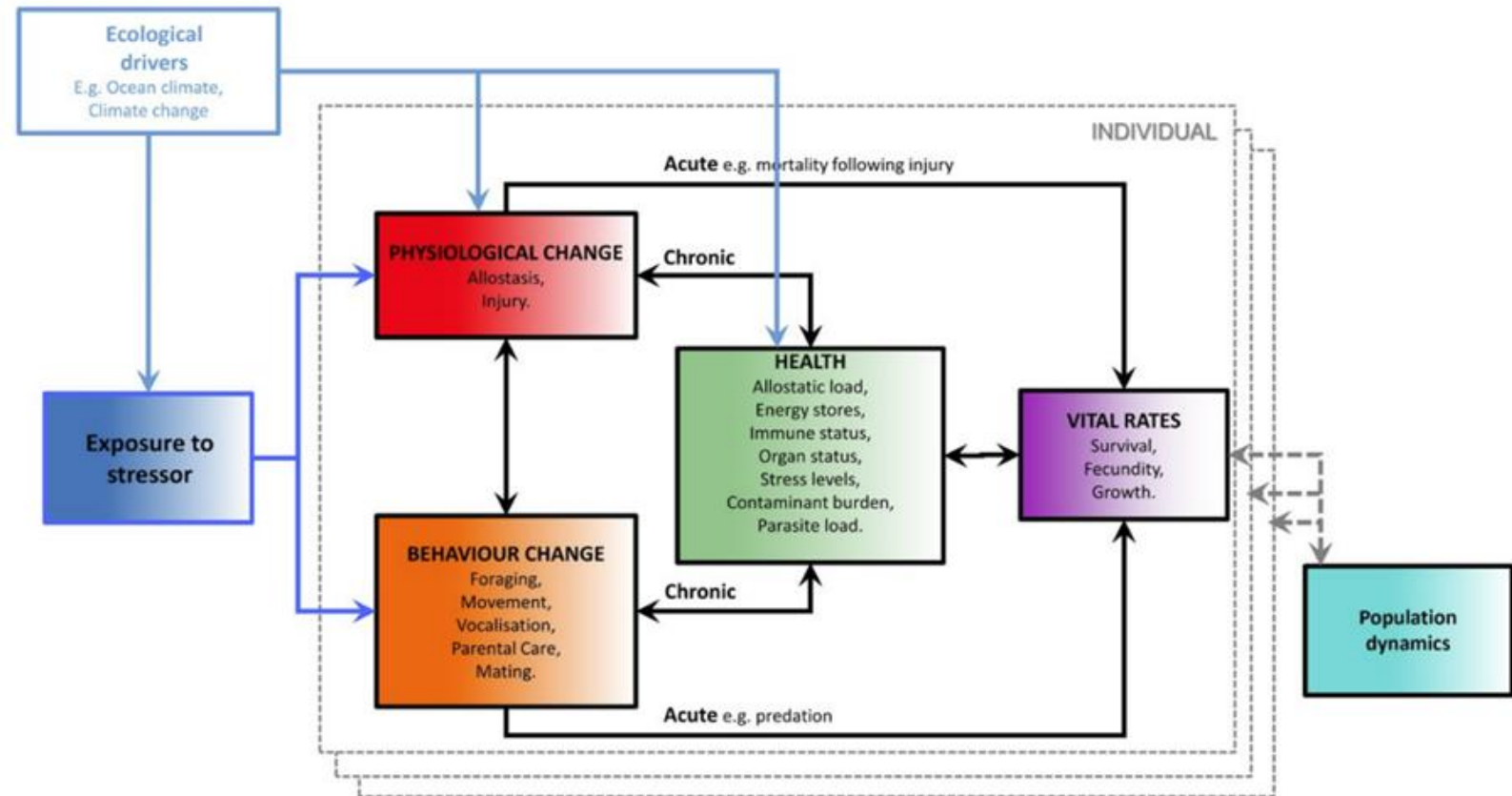


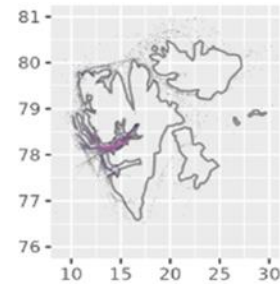
FIGURE 1 The Population Consequences of Disturbance (PCoD) conceptual framework, modified from National Academies (2017). The boxes within the dashed gray boundary line represent the effects of exposure to a stressor and a range of ecological drivers on the vital rates of an individual animal. The effects are then integrated across all individuals in the population to project their effects on the population's dynamics

Data & methods

- AIS data analysis for ship traffic assessment
- Estimated population size and local population trends on the main seabird and sea-mammal species present in Isfjorden and Kongsfjorden
- Literature review of disturbance effects on wildlife in Svalbard
- Document analysis of hearing statements
- Interviews

Results: Changes in expedition cruise traffic 2011-2022

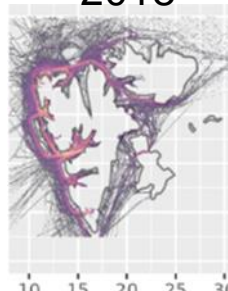
Year	Number of ships	Nautical miles per ship
2011	32	2541
2012	40	3565
2013	44	3270
2014	44	4081
2015	36	5390
2016	48	4639
2017	48	5344
2018	48	6194
2019	30	2884
2020	10	3881
2021	9	6683
2022	54	6771



2011



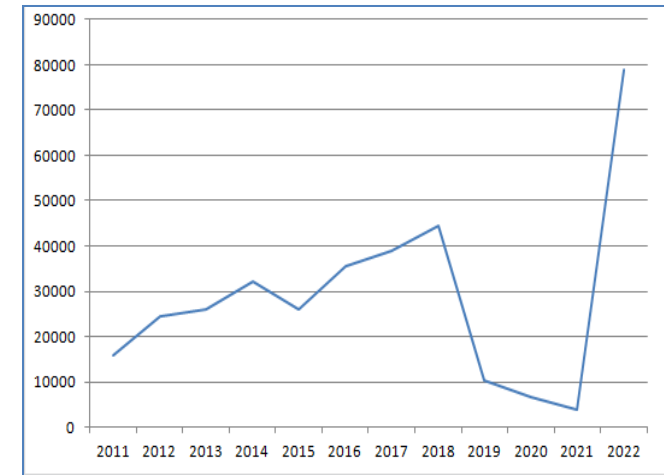
2018



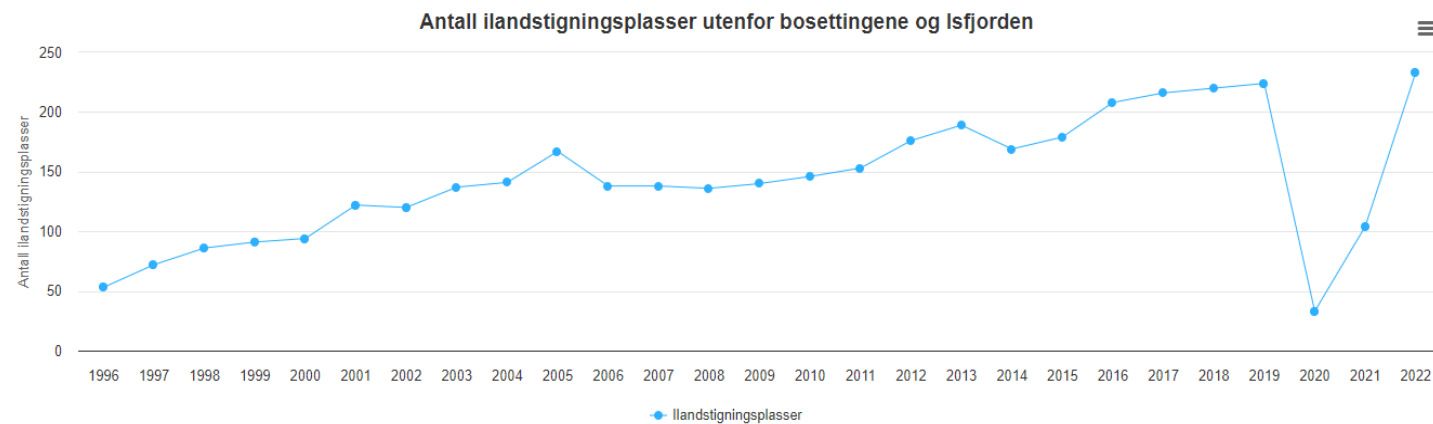
2022

Increase in:

- number of ships
- Distance travelled pr ship
- Number of landing site

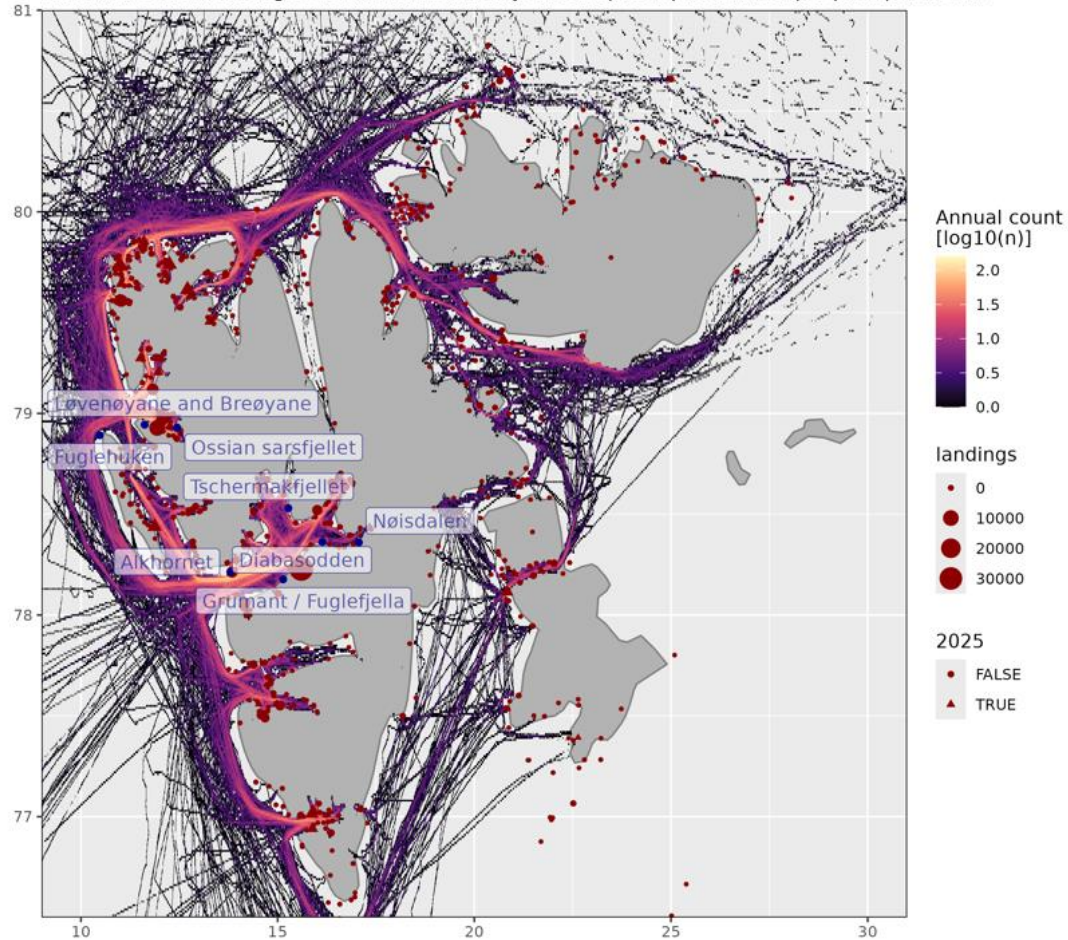


CO2 emissions, ton
AIS data processed by Morten Simonsen



Expedition cruisetraffic and wildlife

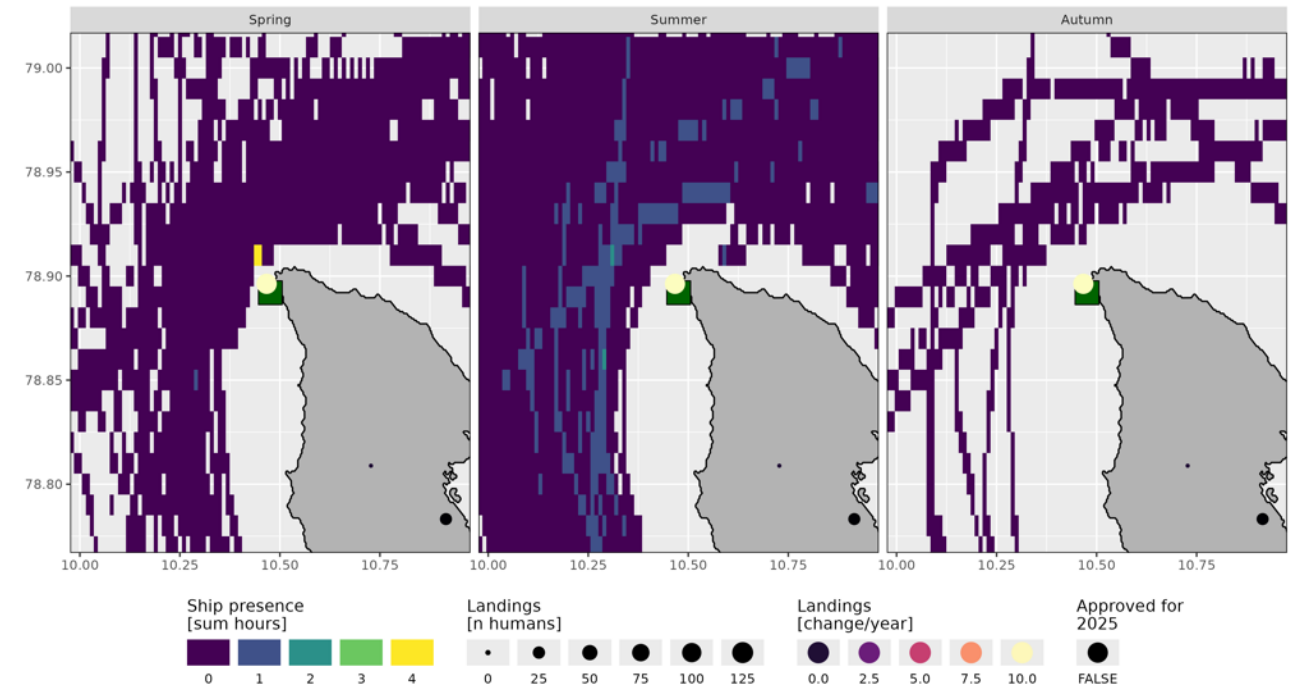
Heatmap of 2022 ship tracks with landing sites and sea bird nesting sites
 NB: Values shown are log10 transformed and only one unique ship is counted per pixel per month



Seasons, 2022

Fuglehuken colony and tourist presence in 2022

NB: Landings are annual values, so red dots are the same in each panel; Spring = March to May



Species	Unit	Count in 2022	trend: 1988-2022	p-value
Black-legged kittiwake	nests	401	7.04	0.0691
Brünnich's guillemot	individuals	507	-27.64	0.0006

2022

Maps by Robert Schlegel

Critique of weak knowledge foundation

«There is a lack of empirical data, analysis, and knowledge behind the intrusive measures being proposed.. The proposals are largely based on the precautionary principle, even where the necessary expertise exists or could have been obtained» (Cruise liner)

«We are also critical of the proposed distance to walruses; existing research is being ignored in favor of the precautionary principle.» (Tourism business)

“Banning an activity without strong evidence against it is simply ignoring the facts and acting compulsively to the unknown” (Cruise liners)

From hearing statements submitted to regulation amendments

Critique of lack of involvement/ local participation

«Lack of dialogue with the industry when selecting the sites, considering that the industry players are the final users of the sites» (Expedition cruise operator)

“Lack of genuine involvement of affected parties; we perceive that this is not in accordance with good administrative practice” (Longyerbyen tourism business).



Legitimacy in environmental management

Lack of legitimacy causes conflict and non-compliance with rules and regulation

What is legitimacy in the context of environmental governance?

- Management is seen as just, appropriate and fair.

Core elements of legitimacy in public policy

- **Input legitimacy:** the fairness, inclusiveness, and quality of participation (Birnbaum 2016)
 - + based on best available knowledge
- **Output legitimacy:** political procedures generate an output that effectively serves the common good, fair distribution of benefits and burden among affected parties (ibid, Prno & Slocombe, 2012)

Concluding remarks

Consultation responses illustrate challenges tied to both input and output legitimacy; both content and process are questioned.

Rapid growth in ship traffic and rapid climate change called for action. BUT:

Extensive use of precautionary principle for enacting strict regulations

- why isn't there more knowledge about local impact from cruise tourism?
- are there limits to application of »the precautionary principle«?
- is the expedition tourism industry a legitimate stakeholder?
- are local inhabitants?

Co-developing carrying capacity indicators for tourism might give more precise management, benefitting both ecosystems, local community and (maybe) tourism industry

Literature

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QUESTIONS?

THANKS FOR LISTENING



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