Fra Norsk Olje og Gass 23.02.2018, oppdatert juli 2018

Vitenskapelig publikasjoner – innspill til oppdatering av Helhetlig Forvaltningsplan for Barentshavet og havområdene utenfor Lofoten

Under følger en liste over relevante publikasjoner fra 2010 og frem til i dag hvor industrien har hatt en rolle i forbindelse med publikasjonen, enten som forfatter/medforfatter eller ved finansiering. Listen inneholder i all hovedsak fagfellevurderte publikasjoner. Det er imidlertid noen unntak, og disse er inkludert da vi mener de kan være av interesse. (dette er stort sett SPE (Society of Petroleum Engineers) publikasjoner). Det er laget en tabell med oversikt over publikasjoner innenfor hvert av følgende fagområder:

1. Effekter av akutte utslipp av olje
2. Effekter av regulære utslipp av produsert vann
3. Effekter av regulære utslipp fra boring
4. Effekt på fisk/fiskeri fra lydenergikilder som brukes til innsamling av seismiske data, inkl. forskning på nye energikilder
5. Effekter på marine pattedyr fra lydenergikilder som brukes til innsamling av seismiske data
6. Metodeutvikling - risikoanalyser
7. Oljevernberedskap i kaldt klima/islagte områder
8. Økosystemforståelse - iskant
9. Økosystemforståelse - polarfront
10. Økosystemforståelse – Havområdene utenfor Lofoten/Vesterålen

1 Effekter av akutte utslipp av olje

Tittel	Konsortium/ Industri-initiativ	Status	Lenke
Assessing impacts of simulated oil spills on the Northeast Arctic cod fishery	SYMBIOSES	Published (2017). "Marine Pollution Bulletin", Vol 126, p 63-73	Link
The effects of oil spills on marine fish: Implications of spatial variation in natural mortality	SYMBIOSES	Published (2017) "Marine Pollution Bulletin", Vol 119, p 102-109.	link
An integrated modeling framework for decision support in ecosystem-based management: case study Lofoten/Barents Sea.	SYMBIOSES	Published (2011). Society of Petroleum Engineers, SPE – 140431-MS	link
Ecotoxicological Mechanisms and Models in an Impact Analysis Tool for Oil Spills	SYMBIOSES	Published (2011). Journal of Toxicology and Environmental Health, Vol.74, p.605-619.	link
Toxicity data for modelling impacts of oil components in an Arctic ecosystem	SYMBIOSES	Published (2013). "Marine Environmental Research", Vol 90, p-9-17.	link

Estimating the impact of petroleum substances on survival in early life stages of cod (*Gadus morhua*) using the Dynamic Energy Budget theory	SYMBIOSES	Published (2014). "Marine Environmental Research" Vol. 101, p. 60-68.	Link
Egg mortality of Northeast Arctic cod (*Gadus morhua*) and haddock (*Melanogrammus aeglefinus*).	SYMBIOSES	Published (2014). ICES Journal of marine science, Vol. 71, Issue 5, p. 1129-1136.	link
Spatiotemporal overlap of oil spill and early life stages of fish.	SYMBIOSES	Published (2013). ICES Journal of marine science, Vol. 71, Issue 4, p. 970-981.	link
Qualitative use of Dynamic Energy Budget theory in ecotoxicology: Case study on oil contamination and Arctic copepods.	SYMBIOSES	Published (2012). Journal of Sea Research, Vol. 73, p. 24-31	link
Crude oil affecting the biomass of the marine copepod Calanus finmarchicus: Comparing a simple and complex population model	SYMBIOSES	Published (2016). "Marine Environmental Research, Vol 119, p.197-206.	link
Validation of an Eulerian population model for the marine copepod Calanus finmarchicus in the Norwegian Sea.	SYMBIOESES	Published (2016). Journal of Marine Systems, Vol. 160, p.81-93.	link
Modelling bioaccumulation of oil constituents in aquatic species.	SYMBIOSES	Published (2013). Marine Pollution Bulletin, Vol. 76, p.178-186.	link
Spatial variations in mortality in pelagic early life stages of a marine fish (*Gadus morhua*).	SYMBIOSES	Published (2014). Progress in Oceanography, Vol. 127, p. 96-107.	link
Evaluating the contribution of ingested oil droplets to the bioaccumulation of oil components — A modeling approach	SYMBIOSES	Published (2014) "Science of the Total Environment", Vol 499, p 99-106.	link
Reproductive strategy of a migratory fish stock: Implications of spatial variations in natural mortality	VISTA program (Equinor)	Published (2016) Canadian Journal of Fisheries and Aquatic Sciences (ISSN 0706-652X), vol 73, 1742-1749	link
Biodegradation-mediated alterations in acute toxicity of water-soluble fraction and single crude oil components in cold seawater	Equinor R&D program	Submitted	
Does microbial biodegradation of water-soluble components of oil reduce the toxicity to early life stages of fish?	Equinor R&D program	In preparation	

Kinetics of oil components in lipid-rich and early stages of Arctic copepods	Equinor R&D program	In preparation	
Sensitivity of polar and temperate marine organisms to oil components.	SAARP program	Published (2011). Environmental Science and Technology 45 (20), 9017-9023	Link
Experimental studies of reproduction and feeding for two Arctic-dwelling Calanus species exposed to crude oil.	SAARP program	Published (2011). Aquatic Biology 10(3), 261-271	Link
Arctic versus temperate comparison of risk assessment metrics for 2 methyl naphthalene.	SAARP program	Published (2011). Marine Environmental Research 72 (4), 179-187.	Link
Environmental toxicology: Population modelling of cod larvae shows high sensitivity to loss of zooplankton prey.	SAARP program	Published (2011). Marine Pollution Bulletin 62 (2), 395-398.	Link
Comparative study on acute effects of water accommodated fractions of an artificially weathered crude oil on *Calanus finmarchicus* and *Calanus glacialis* (Crustacea: Copepoda).	Equinor R&D program	Published (2013). Science of Total Environment, Vol 449, p 276-284.	Link
Using a matrix model for polar cod (*Boreogadus saida*) for assessing relative effects of oil spills at the population level.	IOGP ART JIP	Submitted	
Increasing ecological realism in the effect assessment of oil spills at the population level: the application of matrix models in Arctic *Calanus* species.	IOGP ART JIP	Submitted	
Coastal and shoreline oil spill response – Phase 3: Effects of oil spill in coastal waters	JIP-COS	Final report, Sintef report F26696	
Acute toxicity of naturally and mechanically dispersed oil on the filter-feeding copepod *Calanus finmarchicus*.	JIP-COS	Published (2012) Ecotoxicology and Environmental Safety	Link
Acute and long-term biological effects of mechanically and chemically dispersed oil on lumpsucker (*Cyclopterus lumpus*).	JIP-COS	Published (2015) Marine Env Res	Link
Reproduction dynamics in copepods following exposure to chemically and mechanically dispersed crude oil	JIP-COS	Published (2015) Env Sci and Techn	Link
Oil droplet ingestion and oil fouling in the copepod *Calanus finmarchicus* exposed to mechanically and chemically dispersed crude oil.	JIP-COS	Published (2015) Environmental Toxicology and chemistry	Link
Biological effects of mechanically and chemically dispersed oil on the Icelandic scallop (*Chlamys islandica)*	JIP-COS	Published (2016) Ecotoxicology and Environmental Safety	Link
Toxicity of crude oil and pyrene to the embryos of beach spawning capelin	ENI R&D program	Published (2011)	Link

(*Mallotus villosus*)		Aquatic Toxicology	
Estimated Impacts of Hypothetical Oil Spills in the Alaska Beaufort Sea on Arctic Cod *Boreogadus saida*	Equinor R&D program	Final draft	
The sensitivity of a deep-sea fish species (*Anoplopoma fimbriae*) to oil-associated aromatic compounds, dispersant, and Alaskan North Slope crude oil	Equinor R&D program	Submitted to "Environmental Toxicology and Chemistry"	
Fish and oil in the Lofoten-Barents Sea system: synoptic review of the effect of oil spills on fish populations.	NRC – ProofNy / Havet og Kysten	Published (2007) Marine Ecology Progress Series. 2007;339:283–99.	Link
Effects of chronic crude oil exposure on early developmental stages of the Northern krill (*Meganyctiphanes norvegica*)	NRC – ProofNy / Havet og Kysten	Published (2017). Journal of Toxicology and Environmental Health, Vol. 80, Issue 16-18	Link
Population modeling of cod larvae shows high sensitivity to loss of zooplankton prey	NRC – ProofNy / Havet og Kysten	Published (2011) Marine Pollution Bulletin, Vol 62, Issue 2, 395-398	Link
Novel adverse outcome pathways revealed by chemical genetics in a developing marine fish	NRC – ProofNy / Havet og Kysten	Published (2017) eLIFE 2017; Volum 6:e20707. s. 1-30	Link
Oil droplet fouling and differential toxicokinetics of polycyclic aromatic hydrocarbons in embryos of Atlantic haddock and cod.	NRC – ProofNy / Havet og Kysten	Published (2017) PLoS ONE 2017 Vol 12:e0180048, 1-26	Link
Crude oil exposures reveal roles for intracellular calcium cycling in haddock craniofacial and cardiac development	NRC – ProofNy / Havet og Kysten	Published (2017) Scientific Reports (ISSN 2045-2322)	Link
Acute toxicity of dispersed crude oil on the cold-water copepod *Calanus finmarchicus*: Elusive implications of lipid content	NRC – ProofNy / Havet og Kysten	Published (2016) Journal of Toxicology and Environmental Health (ISSN 1528-7394)	Link
Reproduction dynamics in copepods following exposure to chemically and mechanically dispersed crude oil	NRC – ProofNy / Havet og Kysten	Published (2015) Environmental Science and Technology (ISSN 0013-936X), vol 49, 3822-3829	Link
Oil droplet ingestion and oil fouling in the copepod *Calanus finmarchicus* exposed to mechanically and chemically dispersed crude oil	NRC – ProofNy / Havet og Kysten	Published (2015) Environmental Toxicology and Chemistry (ISSN 0730-7268), vol 34, 1899-1906	Link
Seasonal ecology in ice-covered Arctic seas - considerations for spill response decision making	IOGP ART JIP	Submitted	

Environmental effects of Arctic oil spills and spill response technologies, introduction to a 5-year joint industry effort	IOGP ART JIP	In Press (2018), manuscript accepted, Marine Environmental Research	link
Long-term resilience in polar cod exposed to dispersed oil and burned oil residue	IOGP ART JIP	Submitted	
Biodegradation of oil spill dispersant surfactants in cold seawater	IOGP ART JIP	In preparation	
Migration of petroleum compounds from sea-ice into seawater and associated microbial community response during an in-situ oil spill experiment in Svalbard (80°N)	IOGP ART JIP	Submitted	
Long Term Ice Exposure Studies for enhancing Arctic NEBA (Net Environmental Benefit Analysis) Science Base	IOGP ART JIP	Submitted	
Spill impact mitigation assessment framework for oil spill response planning in the Arctic environment	IOGP ART JIP	Submitted	
Relative sensitivity of Arctic species to physically and chemically dispersed oil determined from three hydrocarbon measures of aquatic toxicity	IOGP Arctic JIP	Published (2017). Marine Pollution Bulletin, Vol 122, p. 316-322.	Link
Dispersibility and biotransformation of oils with different properties in seawater	NRC/Petromaks2	Published (2018). Chemosphere, Vol. 191, p 44-53.	Link
Microbial community and metagenome dynamics during biodegradation of dispersed oil in cold seawater reveals potential key-players	NRC/Petromaks2	In press	
Microbial communities related to biodegradation of dispersed Macondo oil at low seawater temperature with Norwegian coastal seawater	NRC/Petromaks2	Published (2015), Microb Biotechnol; 8(6): 989–998.	Link
Comparison of microbial community dynamics induced by distinct crude oil dispersions reveals compositional differences	NRC/Petromaks2	In review. Continental Shelf Research	
Biodegradation of dispersed oil in seawater is not inhibited by a commercial dispersant	NRC/Petromaks2	In press. Marine Bulletin Research	Link
Biodegradation of chemically dispersed oil in seawater - result from a 3-year research project	NRC/Petromaks2	Published (2017) through AMAP technical seminar	
Microbial communities in Arctic and temperate fjords and their potential for biodegradation of chemically dispersed at low seawater temperatures	NRC/Petromaks2	In review	
Correlation of microbial community structure with the chemical loss of oil (working title)	Equinor R&D program (JIP)	In preparation	
Biodegradation of Dispersed Oil in Arctic Seawater at -1ºC	Equinor R&D program (JIP)	Published (2014). PLOS One 9(1):e84297	Link
Biodegradation of dispersed oil in seawater is not inhibited by a commercial oil spill dispersant	NRC/Petromaks2	Published (2017). Marine Pollution Bulletin	link

Dispersibility and biotransformation of oils with different properties in seawater	NRC/Petromaks2	Published (2018). Chemosphere 191 (2018) 44 - 53	link
Biodegradation of Dispersed Oil in natural Seawaters from Western Greenland and a Norwegian fjord	Equinor R&D program	In preparation	

2 Effekter av regulære utslipp av produsert vann

Tittel	Konsortium/ Industri-initiativ	Status	Lenke
Environmental impact of produced water and drilling waste from the Norwegian offshore Petroleum industry.	NRC – ProofNy / Havet og Kysten	Published (2013) Marine Environmental research	link
Diverse rapportering fra Vannsøyleovervåking		Reports on MDir's webpages	link
Comparison of produced water toxicity to Arctic and temperate species	Equinor R&D program	Published (2014). Ecotoxicology and Environmental Safety 113C:248-258	Link

3 Effekter av regulære utslipp fra boring

Tittel	Konsortium/ Industri-initiativ	Status	Lenke
In situ video observations of benthic megafauna and fishes from the deep eastern Mediterranean Sea off Egypt	Equinor R&D program	Published (2012) African Journal of Marine Science, Vol 34, Issue 2, 215-222	link
Deep-sea observations at hydrocarbon drilling locations: Contributions from the SERPENT Project after 120 field visits	SERPENT	Published (2017) Deep Sea Research Part II: Topical Studies in Oceanography, vol 137, 463-479	link
An assessment of drilling disturbance on *Echinus acutus* var. *norvegicus* based on in-situ observations and experiments using a remotely operated vehicle (ROV)	Equinor R&D program	Published (2010) Journal of Experimental Marine Biology and Ecology, vol 395	link
Recovery of Benthic Megafauna from Anthropogenic Disturbance at a Hydrocarbon Drilling Well (380 m Depth in the Norwegian Sea)	Equinor R&D program	Published (2012) PLOS One	link
Diverse rapportering fra Grunnlagsundersøkelser			link
Diverse rapportering fra Sedimentovervåking			link
Effects of suspended drill cuttings on the coral *Lophelia pertusa* using pulsed and continuous laboratory exposure scenarios		Submitted, in review	

Metabolic responses of the deep-water sponge *Geodia barretti* to suspended bottom sediment, simulated mine tailings and drill cuttings	NRC – ProofNy / Havet og Kysten	Published (2015) Journal of Experimental Marine Biology and Ecology Vol 473, 64-72	Link
Sub-lethal effects of water-based drilling muds on the deep-water sponge *Geodia barretti*	NRC – ProofNy / Havet og Kysten	Published (2016) Environmental Pollution, Vol 212, 525–534	Link
Towards Integrated Environmental Monitoring	Equinor R&D program	Published (2014)	Link
Guideline for Design of Cost Efficient and Robust Sensor Based Environmental Monitoring Systems	Equinor R&D program	Published (2016)	Link
Environmental Monitoring and Modeling of Drilling Discharges at a Location with Vulnerable Seabed Fauna: Comparison between Field Measurements and Model Simulations	Equinor R&D program	Published (2014)	Link
A Real-Time Discharge Modelling and Environmental Monitoring System for Drilling Operations	Equinor R&D program	Published (2013)	Link
Development and test of an AUV for Environmental Monitoring and Asset Integrity in offshore oil&gas scenarios: CLEAN SEA Project	ENI R&D program	Published (2014)	Link
Coral Risk Assessment - Tool Development	Equinor R&D program	Published (2012)	Link
Sedimentation on the cold-water coral *Lophelia pertusa*: Cleaning efficiency from natural sediments and drill cuttings	CORAMM	Published (2011)	Link
Tolerance to long-term exposure of suspended benthic sediments and drill cuttings in the cold-water coral *Lophelia pertusa*	CORAMM	Published (2013)	Link
Resistance of *Lophelia pertusa* to coverage by sediment and petroleum drill cuttings	CORAMM	Published (2013)	Link
Effects of water flow and drilling waste exposure on polyp behaviour in *Lophelia pertusa*	Equinor R&D program	Published (2015)	Link

4 Effekt på fisk/fiskeri fra lydenergikilder som brukes til innsamling av seismiske data, inkl. forskning på nye energikilder

Tittel	Konsortium/ Industri-initiativ	Status	Lenke

Makrellen endrer adferd av seismikklyder	Equinor R&D program	In preparation	Link til Havforskningsrapporten
Mackerel Audiogramme	Equinor R&D program	In preparation	
Population level consequences of seismic surveys on fishes: an interdisciplinary challenge	IOGP Sound and marine life JIP	In preparation	
Integrated modelling of distribution patterns and movements in relation to anthropogenic disturbance: Mackerel response to sound in the Norwegian Sea as a case study	Equinor R&D program	In preparation	

5 Effekt på marine pattedyr fra lydenergikilder som brukes til innsamling av seismiske data, inkl. forskning på nye energikilder

Tittel	Konsortium/ Industri-initiativ	Status	Lenke
Technology requirements to investigate the effects of sound on marine wildlife	IOGP Sound and marine life JIP	Published (2012) International Journal of the Society for Underwater Technology	lenke
Behavioural responses of humpback whales to seismic air guns	IOGP Sound and marine life JIP	Published (2013) Proceedings of Meetings on Acoustics	lenke
Project BRAHSS: Behavioral response of Australian Humpback whales to seismic surveys	IOGP Sound and marine life JIP	Published (2012) Proceedings of Acoustics	lenke
Addressing Challenges in Studies of Behavioural Responses of Whales to Noise.	IOGP Sound and marine life JIP	Published (2016). The Effects of Noise on Aquatic Life II	lenke
A bioenergetics approach to developing a population consequences of acoustic disturbance model	IOGP Sound and marine life JIP	Published (2012). The Effects of Noise on Aquatic Life	lenke
A bioenergetics approach to understanding the population consequences of disturbance: Elephant seals as a model system	IOGP Sound and marine life JIP	Published (2016). The Effects of Noise on Aquatic Life II	lenke
The behavioural response of humpback whales (*Megaptera novaeangliae*) to a 20-cubic inch air gun	IOGP Sound and marine life JIP	Published (2015). Aquatic Mammals, 41: 412-433.	lenke
Response of humpback whales (*Megaptera novaeangliae*) to ramp-up of a small experimental air gun array.	IOGP Sound and marine life JIP	Published (2016). Marine Pollution Bulletin,103, 72-83.	lenke
Communication masking in marine mammals: A review and research strategy	IOGP Sound and marine life JIP	Published (2016). Marine Pollution Bulletin, 103: 15-38	lenke

Auditory effects of underwater noise on odontocetes	IOGP Sound and marine life JIP	Published (2012). The Effects of Noise on Aquatic Life	lenke
Effects of multiple impulses from a seismic air gun on bottlenose dolphin hearing and behaviour	IOGP Sound and marine life JIP	Published (2015). The Journal of the Acoustical Society of America, 137: 1634-1646	lenke
Deadly diving? Physiological and behavioural management of decompression stress in diving mammals	IOGP Sound and marine life JIP	Published (2011). Proceedings of the Royal Society B, 279: 1041-50	lenke
Marine mammals and the impacts of anthropogenic noise: Considerations for the design of large acoustic behavioral response studies such as BRAHSS	IOGP Sound and marine life JIP	Proceedings of Acoustics (2016). 9-11 November 2016, Brisbane, Australia	lenke
Low-frequency temporary threshold shift not observed in spotted or ringed seals exposed to single air gun impulses	IOGP Sound and marine life JIP	Published (2016). The Journal of the Acousitcal Society of America, 140 (4): 2646-2658	lenke
Auditory effects of multiple impulses from a seismic air gun on bottlenose dolphins (*Tursiopstruncatus*)	IOGP Sound and marine life JIP	Published (2016). The Effects of Noise on Aquatic Life	lenke
Listening for signals in seismic noise: A case study of masking in Arctic seals	IOGP Sound and marine life JIP	Proceedings of Meetings on Acoustics (2016) 27. Fourth International Conference on the Effects of Noise on Aquatic Life, Dublin, Ireland	lenke
Amphibious hearing in spotted seals (*Phoca largha*): underwater audiograms, aerial audiograms and critical ratio measurements	IOGP Sound and marine life JIP	Published (2014). The Journal of Experimental Biology 217: 726-734	lenke
Paradoxical escape responses by narwhals (*Monodon monoceros*)		Published (2017) *Science* Vol. 358, Issue 6368, pp. 1328-1331	lenke
Propagation of airgun pulses in Baffin Bay 2012		Published (2014)	lenke
Predicting the spatiotemporal distribution of marine mammals as a baseline for noise related risk assessments: An agent-based modeling approach	IOGP Sound and marine life JIP	In review, Marine Mammal Science	

6 Metodeutvikling risikoanalyser

Tittel	Konsortium/ Industri-initiativ	Status	Lenke
ERA Acute –Multi-Compartment Quantitative Risk Assessment for Acute Oil Spills	ERA Acute JIP	Submitted	
Current practices for oil spill risk assessment in the Arctic	IOGP ART-JIP	Submitted	
Environmental Risk Management of E&P Operations in the Barents Sea: environmental indicators and thresholds levels	BIOSEA JIP ENI/TOTAL R&D	Published (2010)	link
The importance of early identification of Safety and Sustainability related risks in Arctic oil and gas operations	Equinor R&D program	Published (2016)	link
Seatrack tracking seabirds movements outside the breeding season (NPI annual report 2016)	SEATRACK	NPI Annual report	link
Barentshavet som nøkkelområde for sjøfugl om høsten (part of Sjøfugl i Norge 2016. Resultater fra SEAPOP-programmet)	SEATRACK	Published (2016)	link
SEATRACK – status etter andre sesong (part of Sjøfugl i Norge 2015. Resultater fra SEAPOP-programmet).	SEATRACK	Published (2015)	link

7 Oljevernberedskap i kaldt klima/islagte områder

Tittel	Konsortium/ Industri-initiativ	Status	Lenke
The sensitivity of the surface oil signature to subsurface dispersant injection and weather conditions	IOGP JIP	Published (2018), Marine Pollution Bulletin, Vol. 127, p. 175-181.	Link
Dispersant effectiveness testing of different crude oils in ice conditions	IOGP ART JIP	In preparation	
Integrating dispersants in oil spill response in Arctic and other icy environments	IOGP ART JIP	In preparation	
Experimental observations of oil droplet behaviour in simulated under-ice turbulence.	IOGP ART JIP	In preparation	
Evaluation of the ability of calcite, bentonite and barite to enhance oil dispersion under arctic conditions	IOGP ART JIP	Published (2018), Marine Pollution Bulletin, Vol. 127, p. 626-636.	Link
Evaluation of Oil Spill Modelling in Ice Against *In Situ* Drifter Data from the Beaufort Sea	IOGP ART JIP	Published (2017), International Oil Spill Conference, paper 356.	Link

State-of-the-Art Oil Spill Trajectory Prediction in Ice Infested Waters: A Journey from High Resolution Arctic-Wide Satellite Data to Advanced Oil Spill Trajectory Modeling-What You Need to Know	IOGP ART JIP	Published (2017), International Oil Spill Conference, paper 274.	Link
Validation of Oil Spill Transport and Fate Modeling in Arctic Ice	IOGP ART JIP	Published on web (2017) , NRC Research Press	Link
Improving Oil Spill Trajectory Modeling in the Arctic	IOGP ART JIP	In preparation, Marine Pollution Bulletin	
Broadband acoustic backscatter from crude oil under laboratory-grown sea ice	IOGP ART JIP	*Journal of the Acoustical Society of America*, Vol. 140, 4	Link
Aerial application of herding agents to advance *in-situ* burning for oil spill response in the Arctic: A pilot study	IOGP ART JIP	Published (2017). Cold Science and Technology, Vol. 135, p. 97-104.	Link
The value of offshore field experiments in oil spill technology development for Norwegian waters	IOGP ART JIP	Published (2016). Marine Pollution Bulletin. Vol 111, Issues 1-2, p. 402-410.	Link
Oil under ice turbulence and transport of oil with ice	IOGP ART JIP	In preparation	
Implementation of the oil spill preparedness for the Goliat offshore oil field development – The first oil field development in the Barents Sea	ENI	Published (2012)	Link
Coastal Oil Spill Preparedness Improvement Programme (COSPIP) and Memorandum of Understanding – Comprehensive Joint&Industrial Project focusing on Coastal Oil Spill Challenges	COSPIP JIP	Published (2012)	Link

8 Økosystemforståelse iskant

Tittel	Konsortium/ Industri-initiativ	Status	Lenke
Predicting the spatiotemporal distribution of marine mammals (Barents Sea) as a baseline for noise related risk assessments: An agent-based modelling approach	Equinor R&D program	In preparation	
Sea ice resource selection models for polar bears in the Barents Sea sub-population	Equinor R&D program	Published (2017). Ecography 40:001-011	Link
Aquatic behaviour of polar bear as confounding factor for oil spill risk	Equinor R&D program	In preparation	
Resource selection function of ringed seals in Barents Sea as major food source of polar bear	Equinor R&D program	In preparation	
Seasonal ecology in ice-covered Arctic seas - considerations for spill response	IOGP ART JIP	In preparation	

decision making			
Diel vertical migration of Arctic zooplankton during the polar night	SAARP program	Published (2009). Biology Letters 5 (1), 69-72.	Link
Consequences of changing sea-ice cover for primary and secondary producers in the European Arctic shelf seas: Timing, quantity, and quality	SAARP program	Published (2011). Progress in Oceanography 90 (1-4), 18-32	Link
Trophic relations of capelin *Mallotus villosus* and polar cod *Boreogadus saida* in the Barents Sea as a factor of impact on the ecosystem.	SAARP program	Published (2009). Topical studies in Oceanography 56 (21-22), 2054-2067	Link
Evaluating primary and secondary production in an Arctic Ocean void of summer sea ice: An experimental simulation approach.	SAARP program	Published (2011). Progress in Oceanography 90 (1-4), 117-131	Link
Honey, I cooled the cods: Modelling the effect of temperature on the structure of Boreal/Arctic fish ecosystems.	SAARP program	Published (2009). Topical studies in Oceanography 56 (21-22), 2097-2107	Link
The adaptive significance of chromatophores in the Arctic under-ice amphipod *Apherusa glacialis*.	SAARP program	Published (2011). Polar Biology 34 (6), 823-832.	
Antioxidant responses in the polar marine sea-ice amphipod *Gammarus wilkitzkii* to natural and experimentally increased UV levels	SAARP program	Published (2011). Aquatic Toxicology 94 (1), 1-7.	Link
A multiple biomarker approach to tracking the fate of an ice algal bloom to the sea floor.	SAARP program	Published (2011). Polar Biology 34 (1), 101-112.	Link
Effects of ecological conditions on lipid composition of the liver and muscles in the daubed shanny, *Leptoclinus maculatus*	SAARP program	Published (2010). Russian journal of Ecology 41 (1), 51-54.	Link
Annual routines and life history of the amphipod *Onisimus litoralis*: seasonal growth, body composition and energy budget	SAARP program	Published (2011). Marine Ecology-progress Series 417, 115-U135	Link

9 Økosystemforståelse – polarfront

Tittel	Konsortium/ Industri-initiativ	Status	Lenke
A spatially explicit agent-based model for the swimming migration of Brünnich's Guillemot Uria lomvia in the Barents Sea	Equinor R&D program	In preparation	

10 Økosystemforståelse LoVe

Tittel	Konsortium/ Industri-initiativ	Status	Lenke
Baroclinic instability and the mesoscale eddy field around the Lofoten Basin	Equinor R&D program	Published (2015). Journal of Geophysical Research: Oceans Vol 120, 2884-2903	Link
Validation of an Eulerian population model for the marine copepod *Calanus finmarchicus* in the Norwegian Sea	Equinor R&D program	Published (2016). Journal of Marine Systems, vol 160, 81-93	Link
Environmental effects on zooplankton abundance on a sub-Arctic shelf off Vesterålen, Northern Norway	Equinor R&D program	Submitted LoVe MarinEco	
Mechanisms regulating inter-annual variability in zooplankton advection over the Lofoten shelf, implications for cod larvae survival	Equinor R&D program	Submitted LoVe MarinEco	
Food web structure in four locations along the European shelf indicates spatial differences in ecosystem functioning	Equinor R&D program	Submitted to Wiley Ecology LoVe MarinEco	
Winter mortality in *Calanus* populations in two northern Norwegian fjords from 1984-2016.	Equinor R&D program	Submitted	
Spatial and temporal structure of the meroplankton community in a sub-Arctic shelf system	Equinor R&D program	Published (2016). Marine Ecology Progress Series, 555	link
Physiological responses and lipid storage of the coral *Lophelia pertusa* at varying food density	Equinor R&D program	Published (2017) Journal of Toxicology and Environmental Health, Vol 80, 5	Link
Polyp activity estimation and monitoring for cold water corals with a deep learning approach	Equinor R&D program	Published (2016)	Link
A computer vision approach for monitoring the spatial and temporal shrimp distribution at the LoVe observatory	Equinor R&D program	Published (2016) Methods in Oceanography, vol 15-16, 114-128	Link
Computational coral feature monitoring for the fixed underwater observatory LoVe	Equinor R&D program	Published (2016) OCEANS 2016 MTS/IEEE Monterey	Link
Change detection in marine observatory image streams using Bi-Domain Feature Clustering	Equinor R&D program	Published (2016)	Link
Data-driven long-term change analysis in marine observatory image streams	Equinor R&D program	Published (2016)	Link
Active Learning for the Classification of Species in Underwater Images from a Fixed Observatory	Equinor R&D program	Published (2016)	Link
Automated multivariate analysis of multi-sensor data submitted online: Real-time environmental monitoring	Equinor R&D program	Published (2016) Published in PlosOne	Link

The LoVe Ocean Observatory is in operation	Equinor R&D program	Marine Technology Society Journal	Link
Effects and recovery of larvae of the cold-water coral *Lophelia pertusa* exposed to drill cuttings, barite and bentonite	Equinor R&D program	In preparation	
Computer vision enables short- and long-term analysis of *Lophelia pertusa* polyp behaviour and colour from an underwater observatory	Equinor R&D program	In preparation	