

Projects in the Fram Centre Flagships for 2014

Research areas/Project titles	Project leader (s)	Participating institutions	Flagship	E-mail project leader
Effects of climate change on sea and coastal ecology in the north (Fjord and Coast)				
<i>Physical-biological coupling: Oceanography and habitat use by predators and their prey</i>				
Impact of harbour seal predation on Tana salmon and Tana salmon fishery	Martin Svenning	NINA, NIKU, IMR, TRFM	Fjord and Coast	Martin.svenning@nina.no
weShare – Ecological and commercial implications of extreme winter arrivals of herring and whales into North-Norwegian fjord systems	Martin Biuw	ApN, NPI, UoT, NORUT, Lkarts, UoStA	Fjord and Coast	mab@akvaplan.niva.no
How do a dominant predator and climate shape fish biodiversity over space and time in large marine ecosystems?	Kari Ellingsen	NINA, UoT, IMR, PINRO, BedIn, MU	Fjord and Coast	Kari.Ellingsen@nina.no
Drift of fish larvae, fish-stock interactions and their effect on seabird dynamics	Kjell Einar Erikstad	NINA, IMR, NTNU, CNRS, AU	Fjord and Coast	kjell.e.erikstad@nina.no
Seabird habitat use and migration strategies	Børge Moe	NINA, UNIS, NTNU, NILU, UoT, CNRS, UoG, AU, LU, BAS, IMARES, AARI	Fjord and Coast	borge.moe@nina.no
A coastal, ice-associated arctic whale in a changing climate	Christian Lydersen	NPI, UoT, VI, UoW	Fjord and Coast	Christian.lydersen@npolar.no
<i>Structure, function and change in Arctic and boreal fjord ecosystems</i>				
Recovery of coastal kelp ecosystems – driven by climate change or predators	Hartvig Christie	NIVA, UoT, UoM	Fjord and Coast	Hartvig.christie@niva.no

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Effects of oceanic inflow and glacial runoff on fjord circulation in Kongsfjorden, Svalbard	Arild Sundfjord	NPI, IMR, UNIS	Fjord and Coast	arild.sundfjord@npolar.no
Life on the edge – blue mussels on Svalbard	Jørgen Berge	UoT, UNIS, ApN, AU, IOPAS, SAMS	Fjord and Coast	jorgen.berge@uit.no
Kongsfjorden Ecosystem – new views after more than a decade of research	Haakon Hop	NPI	Fjord and Coast	haakon.hop@npolar.no
Direct age determination in crustaceans	Jan Sundet	IMR, UoT, ApN, BC, UoNB	Fjord and Coast	jan.sundet@imr.no
Trophic interactions in pelagic ecosystems	Tove M. Gabrielsen	UNIS, ApN, UoT	Fjord and Coast	tove.gabrielsen@unis.no
Pelagic ecosystems in ice-covered and ice-free fjords under climate change	Claudia Halsband	ApN, UoT, UNIS	Fjord and Coast	clh@akvaplan.niva.no
<i>Outreach</i>				
Fjord and Coast-2011-2014: Synthesis workshop	Arne Bjørge Paul Renaud	IMR, ApN	Fjord and Coast	arne.bjorge@imr.no pr@akvaplan.niva.no
Sea ice in the Arctic Ocean, Technology and Systems of Agreements (Arctic Ocean)				
<i>Sea ice, ecosystems and models</i>				
CASPER: Characterization of Arctic sea ice properties from remote sensing observations	Torbjørn Eltoft	UoT, NPI, NORUT, MET, KSS	Arctic Ocean	torbjorn.eltoft@uit.no
SOLICE: Developing Modelling Tools to Understand the Role of Solar Radiation to Sea Ice Mass Balance in a Seasonally Ice Covered Arctic	Mats Granskog	NPI, MET, UoT, ApN, FMI, CRREL, AWI	Arctic Ocean	mats.granskog@npolar.no
ATWAIN: Long-term variability and trends in the Atlantic water inflow region	Vladimir Pavlov	NPI, IMR, UNIS, UoT, IOPAS	Arctic Ocean	vladimir.pavlov@npolar.no
ModOIE: Modeling of ice, ocean and ecology of the Arctic ocean	Ole-Anders Nøst	ApN, IMR, NPI, SINTEF, MET	Arctic Ocean	oan@akvaplan.niva.no
ArctisMod: Ecosystem modeling of the Arctic Ocean around Svalbard	Pedro Duarte	NPI, ApN, NIVA, UoT	Arctic Ocean	pedro.duarte@mpolar.no

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<i>Driving forces and development of new industry</i>				
Key factors for increased use of the Northern shipping route	Eirik Mikkelsen	NORUT, FNI, ApN, Capia, UAF	Arctic Ocean	Eirik.Mikkelsen@norut.no
<i>Regimes for sustainable management</i>				
A-LEX: Regulating Arctic Shipping - Political, technological and environmental challenges	Tore Henriksen	UoT, MarinTek, ApN, UU SMU, ILC, MIR, VUB, DU	Arctic Ocean	tore.henriksen@uit.no
Ocean acidification and ecosystem effects in northern waters (Ocean acidification)				
<i>Understanding the physical and chemical mechanisms controlling ocean acidification in Arctic waters – past, present and future</i>				
Establishing the Current Status of ocean acidification in the Norwegian Arctic - OA ^{state}	Agneta Fransson Richard Bellerby	NPI, NIVA, IMR	Ocean acidification	agneta.fransson@npolar.no richard.bellerby@niva.no
The role of Sea Ice processes on Calcium Carbonate saturation levels – SICCA	Agneta Fransson Melissa Chierici	NPI, IMR, NIVA	Ocean acidification	agneta.fransson@npolar.no Melissa.Chierici@imr.no
<i>Ocean acidification effects on key components of the Arctic marine ecosystem</i>				
Effects of OA and temperature on Arctic vs. boreal zooplankton species and populations	Haakon Hop Howard Browman	NPI, IMR, ApN	Ocean acidification	haakon.hop@npolar.no howardb@imr.no
Effects of Ocean acidification on the reproduction of the reef building cold water coral <i>Lophelia pertusa</i>	Johanna Järnegren	NINA, NTNU	Ocean acidification	johanna.jarnegren@nina.no
<i>Socio-economics of ocean acidification</i>				
Economic value and Ocean acidification	Eirik Mikkelsen	NORUT, UoT, NIVA	Ocean acidification	Eirik.Mikkelsen@norut.no
<i>Modelling</i>				
Arctic Ocean acidification modelling	Richard Bellerby	NIVA, IMR, NPI, ApN	Ocean acidification	richard.bellerby@niva.no

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Effects of climate change on terrestrial ecosystems, landscapes, society and indigenous peoples (Terrestrial)				
<i>Vegetation state change and herbivore management</i>				
NCoE-Tundra: Herbivore effects on tundra overgrowth, management and environmental gains	Jane Uhd Jepsen	NINA, UoT	Terrestrial	jane.jepsen@nina.no
KLIMAVEG: Long term vegetation change in alpine areas in Northern-Norway and Poland – relation to climate and grazing	Jutta Kapfer	NFLI, UoT, UoOu	Terrestrial	jutta.kapfer@skogoglandskap.no
NORKIND: Groundwater associated vegetation in North-Norway	Jutta Kapfer	NFLI, ApN, NGU	Terrestrial	jutta.kapfer@skogoglandskap.no
ECOTONE: Aerial observations of structural changes in vegetation – effects of grazing and climate on vegetation and cultural heritage	Jane Uhd Jepsen	NINA, NIKU, UoT	Terrestrial	jane.jepsen@nina.no
<i>Ecosystem effects of extreme climate events and changing seasons</i>				
WINNIT – effects of extreme weather and long distance pollution on plant societies	Jarle W. Bjerke	NINA, Bioforsk, UoT	Terrestrial	jarle.werner.bjerke@nina.no
EWWA: Winter climate and effects of extreme warm weather on vegetation in northern ecosystems	Jarle W. Bjerke	NINA, NORUT, Bioforsk, UoT	Terrestrial	jarle.werner.bjerke@nina.no
Climate changes and archaeological deposits	Elin R. Myrvoll	NIKU, Bioforsk, UoT	Terrestrial	elin.myrvoll@niku.no
FINEGRASS: Effect of climate extremes on inland production of grass in North-Norway	Gregory Taff	NFLI, Bioforsk, NINA	Terrestrial	gta@skogoglandskap.no
<i>Capacity for adaptation in indigenous people and local societies</i>				
Historical use of landscape: Sami use of the landscape in Sápmi (outreach)	Stine Barlindhaug	NIKU	Terrestrial	stine.barlindhaug@niku.no

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<i>Adaptive management of ecosystem services</i>				
Geese beyond borders: Effects of grazing geese on pasture and tundra	Ingunn Tombre	NINA, NIKU, NORUT	Terrestrial	ingunn.tombre@nina.no
Goose grazing: Experimental study of grazing effects of geese	Ingunn Tombre	NINA, Bioforsk, NIKU, ASMH	Terrestrial	ingunn.tombre@nina.no
Harvest of arctic resident species	Eva Fuglei	NPI, NINA, UoT, HUC	Terrestrial	eva.fuglei@npolar.no
<i>Observation systems for climate effects</i>				
COAT: Climate-ecological-Observatory-for-Arctic-Tundra	Rolf Ims	UoT, NINA, NPI, UNIS, MET	Terrestrial	rolf.ims@uit.no
<i>General projects across the flagship</i>				
Ottar – the Varanger Peninsula (outreach)	Ingrid Jensvoll	UoT, NINA, NPI, NORUT, SPoN, MET	Terrestrial	ingrid.jensvoll@uit.no
Efficient Technology: Composition of plant by use of Near Infra-Red Spectroscopy	Kari Anne Bråthen	UoT, Bioforsk	Terrestrial	kari.brathen@uit.no
Hazardous substances – effects on ecosystems and human health (Hazardous substances)				
<i>Human Health & society</i>				
Human health effects of contaminants	Torkjel Sandanger	UoT, NILU	Hazardous substances	Torkjel.Sandanger@nilu.no / torkjel.sandanger@uit.no
<i>Climate change impact and new contaminants</i>				
COPOL – Methylmercury in Arctic marine food webs	Anders Ruus	ApN/NIVA, NPI, NILU, SINTEF	Hazardous substances	anders.ruus@niva.no
COPOL II - Importance of primary and secondary sources for POP-concentrations in Kongsfjorden	Geir W. Gabrielsen	APN/NIVA, NPI, NILU	Hazardous substances	gabrielsen@npolar.no
Influence of pollution and climate variation in rivers and coastal waters indicated by fresh-water and marine bivalves (Kolarctic)	Michael Carroll	ApN/NIVA, Bioforsk, NINA	Hazardous substances	michael.carroll@akvaplan.niva.no

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Emission, exposure and residence times of cyclic siloxanes in Tromsøysund	Nicholas Warner	NILU, ApN/NIVA	Hazardous substances	Nicholas.Warner@nilu.no
Uptake and trophic magnification of organophosphorus flame retardants in Arctic lake ecosystems.	Anita Evenset	ApN/NIVA, NPI, NILU, UoT	Hazardous substances	Anita.Evenset@akvaplan.niva.no
<i>Environmental contaminants in a multi-stress perspective</i>				
Multi-stress relationships in seabird populations: interactions between natural stressors and environmental contaminants	Jan O. Bustnes	NINA, NPI, NVH, ApN, NILU	Hazardous substances	Jan.Bustnes@nina.no
Effects of contaminant exposure on energetics	Heli Routti	NPI, NILU, UoT, NVH, SINTEF	Hazardous substances	heli.routti@npolar.no
Impacts of environmental contaminants and natural stressors on northern raptors	Jan O. Bustnes	NINA, NILU, UoT	Hazardous substances	Jan.Bustnes@nina.no
Microplastics in arctic marine food chains; biological uptake pathways and socio-economic consequences	Claudia Halsband Dorte Herzke	ApN/NIVA, NILU, NINA, NORUT, NPI, UNIS, UoT	Hazardous substances	claudia.halsband@akvaplan.niva.no dhe@nilu.no
Is the Arctic charr population in Lake Ellasjøen, Bjørnøya, affected by chronic exposure to contaminants?	Anita Evenset	ApN/NIVA, NILU, UoT	Hazardous substances	Anita.Evenset@akvaplan.niva.no
<i>Pollution from petroleum activities and shipping in the north – Effects on Arctic ecosystems and communities</i>				
The combined effects of radionuclides, metals and organic contaminants in produced water on early life stages of <i>Calanus finmarchicus</i>	Louise K. Jensen	NRPA, UoT, NIVA, SINTEF	Hazardous substances	louise.kiel.jensen@nrpa.no

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<i>Risk communication and participatory governance on local, national and international level</i>				
Contaminants, food and health security in border regions	Eldbjørg Heimstad	NILU, NORUT, UoT, ApN, NRPA	Hazardous substances	esh@nilu.no
Heavy metal crabs	Anita Evenset Helena Falk	ApN, NORUT, NILU	Hazardous substances	Anita.Evenset@akvaplan.niva.no ahf@akvaplan.niva.no
<i>Outreach</i>				
<i>Sadionor theatre group: "Our synthetic everyday"</i>	NILU, ApN	All flagship	Hazardous substances	esh@nilu.no
<i>"Science in The City" – 2014, Copenhagen</i>	NILU, ApN	All flagship	Hazardous substances	esh@nilu.no
<i>"Researchers on tour 2014"</i>	NILU, ApN	All flagship	Hazardous substances	esh@nilu.no
Environmental impacts of industrial activity in the north (MIKON)				
<i>Knowledge basis for ecosystem based management</i>				
Advancing Environmental Risk Assessment in the Arctic	Cynthia Juyné Beegle-Krause	SINTEF, NPI, NINA, UoT	MIKON	CJ.Beegle-Krause@sintef.no
Effects on benthic ecosystems of bottom trawling	Ellen Øseth	NPI, IMR, ApN	MIKON	oseth@npolar.no
Ecosystem vulnerability assessment of demersal resources in the Barents Sea	Edda Johannesen Raul Primicerio	IMR, UoT	MIKON	Edda.johannesen@imr.no raul.primicerio@uit.no
<i>Consequences for organisms and ecosystems</i>				
Anthropogenic noise detection using passive acoustic monitoring (PAM) devices in the northern Barents Sea	Kit Kovacs	NPI, UoT	MIKON	kit.kovacs@npolar.no
Biological effects of the Skjervøy diesel oil spill – a sub-Arctic case study	Kjetil Sagerup	ApN, UoT	MIKON	kjetil.sagerup@akvaplan.niva.no

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GreenAcid-Bile acid analysis of polar cod in connection to the NFR-funded Polarisation project	Jasmine Nahrgang	UoT, UNIS, Unilab	MIKON	jasmine.m.nahrgang@uit.no
FIMITA - Fate and Impact of Mine Tailings on marine Arctic ecosystems	Hilde C. Trannum	NIVA, ApN, NGU	MIKON	hilde.trannum@niva.no
Salmon farms as a source of emerging and legacy contaminants in wild fish	Jan Ove Bustnes	NINA, NILU, IMR	MIKON	Jan.Bustnes@nina.no
CASE - Current Arctic Shipping and the Environment	Stig B. Dalsøren	CICERO, NORUT, SINTEF, Kystverket	MIKON	stig.dalsoren@cicero.oslo.no
Spatiotemporal distribution of salmon lice in Northern Norwegian fjords	Pål Arne Bjørn	IMR, UoT, NINA	MIKON	paalabj@IMR.no
Risk assessments of marine birds to oil spills: Developing new methods based on tracking technology and oil drift models	Kjell Einar Erikstad	NINA, SINTEF, IMR, NPI	MIKON	kjell.e.erikstad@nina.no
Toxicity and fate of black carbon and associated contaminants in Arctic marine ecosystems	Maria Granberg	NPI, ApN, UoT	MIKON	Maria.Granberg@npolar.no
<i>Consequences for cultural heritage and society</i>				
MESAT – Development of methods based on satellitts - mapping cultural heritage sites	Elin Rose Myrvoll	NIKU, NINA	MIKON	elin.myrvoll@niku.no
CULRES-Remote sensing: Mapping and monitoring cultural heritage sites and environments in the Svalbard Archipelago (CULRES)	Stine Barlindhaug	NIKU, NINA	MIKON	stine.barlindhaug@niku.no
RippEffect - Ripple environmental effects of mining in northern areas (RipEffect)	Vera Helene Hausner	UoT, NINA	MIKON	vera.hausner@uit.no
Reindeer husbandry and development of industry - evaluation of consequences	Jan Åge Riseth	NORUT, NINA	MIKON	Jan.Age.Riseth@norut.no
The consequences of aquaculture for ecosystem services and societies in the north	Bent Dreyer	Nofima, UoT, IMR	MIKON	bent.dreyer@nofima.no

Abbreviations:

AARI: Arctic and Antarctic Research Institute; **ApN:** Akvaplan-niva Inc.; **ASMH:** Agricultural Services – Midtre Hålogaland; **AU:** Aarhus University; **AWI:** Alfred Wegener Institute; **BAS:** British Antarctic Survey; **BC:** Bates College; **BedIn:** Bedford Institute; **Bioforsk:** Norwegian Institute for Agricultural and Environmental Research; **CICERO:** Center for International Climate and Environmental Research; **CNRS:** The Centre National de la Recherche Scientifique; **CRRL:** Control/Robotics Research Laboratory (NYU Polytechnic School of Engineering); **DU:** Dalhousie University; **FMI:** Finnish Meteorological Institute; **FNI:** Fridtjof Nansen Institute; **HiFi:** Finnmark University College; **HUC:** Hedmark University College; **ILC:** Institute of Legislation and Comparative Law under the Government of the Russian Federation; **IMARES:** Institute for Marine Resources & Ecosystem Studies; **IMR:** Institute of Marine Research; **IOPAS:** Institute of Oceanology, Polish Academy of Sciences; **KSS:** Kongsberg Satellite Services; **LU:** Laval University; **MarinTek:** The Norwegian Marine Technology Research Institute; **MET:** The Norwegian Meteorological Institute; **MIR:** Moscow State Institute of International Relations; **MU:** Massey University; **NFLI:** The Norwegian Forest and Landscape Institute; **NGU:** Geological Survey of Norway; **NINA:** Norwegian Institute for Nature Research; **NIKU:** The Norwegian Institute for Cultural Heritage Research; **NILU:** Norwegian Institute for Air Research; **NIVA:** Norwegian Institute for Water Research; **Nofima:** The Norwegian Institute of Food, Fisheries and Aquaculture Research; **NORUT:** Northern Research Institute; **NPI:** Norwegian Polar Institute; **NRPA:** Norwegian Radiation Protection Authority; **NTNU:** Norwegian University of Science and Technology; **NVH:** Norwegian School of Veterinary Science; **SAMS:** Scottish Association for Marine Science; **SINTEF:** The Company for Industrial and Technological Research; **SMU:** State Maritime University; **SPoN:** Sami Parliament of Norway; **TRFM:** Tana River Fisheries Management; **UAF:** University of Alaska Fairbanks; **UNIS:** The University Centre in Svalbard; **UoG:** University of Groningen; **UoNB:** University of New Brunswick; **UoOu:** University of Oulu; **UoM:** University of Maine; **UoStA:** University of St. Andrews; **UoT:** University of Tromsø - The Arctic University of Norway; **UoW:** University of Windsor; **UU:** Utrecht University; **VI:** Norwegian Veterinary Institute; **VUB:** Vrije University Brussels