

Jurisdiction	Project Number	Title	Status	Summary of Objectives	Research Dates	Topic Area	Objective/Issue	Area of Research	Collaborating Countries	Coordinating Scientist	Annual Expenditure
Canada	C1	Marine migration and survival of post-smolt Atlantic salmon from Bay of Fundy rivers	Completed	Provide knowledge about marine habitat (migration and feeding grounds) used by salmon post-smolts from Bay of Fundy rivers. Determine the location, timing and extent of salmon post-smolt mortality at sea. Investigate the causes and mechanisms of marine mortality of salmon post-smolts. Provide information to fuel the recovery programme for inner Bay of Fundy salmon stocks.	2001 - 2003	Distribution/ migration the sea	Migratory behaviour of individual fish	Bay of Fundy and Gulf of Maine	USA	Gilles L Lacroix	
Canada	C2	Distribution, health and condition of Atlantic salmon from Bay of Fundy rivers while at sea	Completed	Provide knowledge about marine habitat and health of salmon post-smolts from Bay of Fundy rivers. Investigate the causes and mechanisms of marine mortality of salmon post-smolts. Provide information to fuel the recovery programme for inner Bay of Fundy salmon stocks.	2002 - 2004	Distribution/ migration the sea	Distribution of salmon in the sea	Bay of Fundy and Gulf of Maine	USA and Norway	Gilles L Lacroix	
Canada	C3	Marine migration and survival of post-smolt Atlantic salmon from Saint-Jean River (Gaspé)	Completed	Provide knowledge of the marine habitat (migration routes and feeding grounds) used by salmon post-smolts from Bay of Gaspé rivers. Determine the location, timing and extent of salmon post-smolt mortality at sea. Investigate the causes and mechanisms of marine mortality of salmon post-smolts.	2005 - 2006	Distribution/ migration the sea	Migratory behaviour of individual fish	Saint-Jean River, Gaspé Peninsula, Quebec		Julian Dodson, Francois Caron	
Canada	C4	Marine migration and survival of kelt Atlantic salmon from the Saint-Jean River (Gaspé)	Completed	Provide knowledge of the marine habitat (migration routes and feeding grounds) used by salmon kelts from Bay of Gaspé rivers. Determine the location, timing and extent of kelt mortality at sea. Investigate the causes and mechanisms of marine mortality of salmon kelts.	2006	Distribution/ migration the sea	Migratory behaviour of individual fish	Saint-Jean River, Gaspé Peninsula, Quebec		Francois Caron	
Canada	C5	Tracking experimentally 'escaped' farmed salmon	Completed	Determine the course tracks and fates of sonically tagged farmed salmon released in winter and spring.	2005	Distribution/ migration the sea	Migratory behaviour of individual fish	Cobscook Bay, Maine, USA; Quoddy region, NB, Canada		Fred Whoriskey	
Canada	C6	Atlantic salmon distribution and abundance at sea	Completed	Determine salmon distribution and abundance at sea, particularly post-smolts in the Labrador Sea and North Grand Banks; collect biological and other data; investigate the relationship between salmon and their prey; investigate the relationship between oceanographic parameters and salmon abundance; tag and release salmon.	2001 - 2005	Distribution/ migration the sea	Distribution of salmon in the sea	Labrador Sea and Northern Grand Banks		David Reddin	
Canada	C7	Integrated field and laboratory assessment of the effects of endocrine – disrupting substances on Atlantic salmon smolts.	Completed	Laboratory tests of the effects of endocrine-active substances in municipal, and industrial effluents; field tests of the effects of endocrine-active substances in municipal and industrial effluents; field tests on caged smolts near sites with potential for significant agricultural run-off; ocean field tests of link between exposure of smolts to endocrine - disrupting substances and subsequent lower adult returns.	2003 - 2007	Specific natural and anthropogenic factors	Pollutants	Atlantic Canada and County Mayo, Ireland	Ireland	Wayne Fairchild	
Canada	C8	Use of stable isotopes to assess changes in marine trophic ecology of Atlantic salmon ( <i>Salmo salar</i> )	Completed	Assess trophic and dietary information through analysis of stable isotope signatures of carbon and nitrogen from previously compiled scale samples from various salmon stocks; compare isotopic signatures within and among stocks to various differences in feeding ecology in time and space; examine evidence of environmental influence on trends in isotopic signatures; examine linkages of stable isotope signatures with trends in abundance.	2006 – 2007	Life history/ biological processes	Post-fishery recruitment marine factors	Desk study examining archived material and samples from Newfoundland, the Maritime Provinces, the Quebec North Shore and the Barents Sea (Tana River, Finland)	Finland	J Brian Dempson	
Canada	C9	Effective population size, genetic and population structure of Atlantic salmon in Newfoundland and Labrador	Completed	Document population structure and connectivity (gene flow) among Newfoundland and Southern Labrador rivers. Test for temporal stability of the structure over past 50 years.	2003 - 2008	Distribution/ migration the sea	Origin of catches in directed fisheries	Newfoundland and Labrador		Daniel Ruzzante	
Canada	C10	River and extended estuary acoustic tracking of Atlantic salmon ( <i>Salmo salar</i> ) kelts and bright salmon	Completed	1) To track and document migratory behaviour of Atlantic salmon kelts as they leave the river for the open ocean and return to rivers; 2) To identify possible critical habitat sites utilized by kelts and bright salmon during their migration; 3) To examine the mortality rates of kelts and bright salmon during migration.	2006 - 2008	Distribution/ migration the sea	Migratory behaviour of individual fish	LaHave River and estuary, Nova Scotia		Peter G. Amiro, A F. Gibson	
Canada	C11	Integrated modelling of juvenile Atlantic salmon movement and	Completed	1) to develop an innovative geomatic approach capable of relating the behaviour of smolts during their migration	2005 - 2008	Distribution/ migration the sea	Migratory behaviour of individual fish	York River and Baie de Gaspé, Quebec	UK	Julian Dodson	

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		physical habitat in fluvial and estuarine environments		the characteristics of the physical habitat in rivers and estuaries; 2) to apply this approach to the analysis of migration of smolts through the estuaries of the St. J Dartmouth and York rivers and down the Baie de G.							
Canada	C12	Estuary acoustic tracking of Atlantic salmon ( <i>Salmo salar</i> ) smolts at kelts – Conne River, Little River and Bay d’Espoir, Newfoundland	Completed	1) To tag and track migratory behaviour of Atlantic salmon smolts and kelts as they leave the Conne River Newfoundland; 2) To determine the movements and migration patterns throughout the Bay d’Espoir fjord. To provide insight into the initial survival and residence of smolts and kelts migrating through the fjord.	2006 - 2008	Distribution/ migration the sea	Migratory behaviour of individual fish	Conne River and Bay d’Espoir Newfoundland		J. Brian Dempson, Clarke	
Canada	C13	Spatio-temporal distribution of Atlantic salmon stocks and the impact of the West Greenland fishery.	Completed	Provide knowledge about the river origin of the salmon catch in the commercial fishery at West Greenland.	2006 - 2008	Distribution/ migration the sea	Origin of catches in directed fisheries	Samples from West Greenland		Louis Bernatchez, King	
Canada	C14	Genetic population structure of Atlantic salmon in Eastern Canada and its implication for conservation	Completed	This project aims at elucidating the genetic population structure of Atlantic salmon from a small (river) to a large (Eastern Atlantic coast) spatial scale and at helping in proposing conservation units for the Canadian distribution range. Samples from 51 rivers in Quebec, New-Brunswick and Labrador have been obtained and the characteristics evaluated at 13 microsatellite loci. Further work is ongoing on the variability in major histocompatibility complex genes and its association with exposure to pathogens. The project began in 2004 and completed in 2008 as part of the PhD project of Mélanie Dionne (Université Laval, Québec).	2004 - 2008	Distribution/ migration the sea	Origin of catches in directed fisheries	Rivers in Quebec, Gulf of St Lawrence and Labrador		Louis Bernatchez, Mélanie Dionne	
Canada	C15	<b>Pelagic ecosystem survey of the Northwest Atlantic</b>	Ongoing	Sample the upper pelagic ecosystem during the period corresponding to the early post-smolt phase. Determine distribution and relative abundance of post-smolts at selected locations and times along hypothesised ocean migration route. Obtain data on relative abundance of other species including macroplankton aggregations provide information on the role of salmon in the pelagic ecosystem. Obtain oceanographic information.	2008 - 2010	Distribution/ migration the sea	Distribution of salmon in the North West Atlantic (stations north of 52°N in 2009)		USA	Gerald Chaput, David Reddin, Tim Sheehan	
Canada	C16	<b>Miramichi River kelt movements and survival</b>	Ongoing	Document the spring movements and survival of kelts from the Miramichi River as they return to the sea. Use pressure sensitive tags to record the depths used by kelts.	2008 - 2011	Distribution/ migration the sea	Migratory behaviour of individual fish	Miramichi River estuary and Gulf of St Lawrence		Fred Whoriskey	£12,500 (excluding recovery deployment and other costs recovered under other projects)
Canada	C17	<b>Marine survival of Canadian Atlantic salmon stocks: long-term monitoring</b>	Ongoing	Long-term monitoring of smolt production and adult return estimates from a number of rivers in Newfoundland region, Maritimes region, Gulf region and Quebec.	Annual	Long-term monitoring	Time series of marine survival/growth estimates	Canadian rivers in Newfoundland region, Maritimes region, Gulf region and Quebec		Gerald Chaput	£639,500
Canada	C18	<b>Atlantic salmon smolt migration and survival within Canadian rivers, estuaries and during their marine life stage</b>	Ongoing	Provide a time-series of stage specific estimates of mortality rates for smolts and post-smolts at various points of their at-sea migration, including for their transitions through fresh water, the estuary and to various points in the ocean; examine the relation between biological characteristics of the fish and survival rates; attempt to isolate mortality causes; document the migration pathways and speeds of smolts from different rivers.	2003 - 2010	Distribution/ migration the sea	Migratory behaviour of individual fish	Miramichi River and estuary; Restigouche River and Baie de Chaleurs; Cascapedia River and estuary; St-Jean (Côte-Nord) River and estuary; Western Arm Brook Strait of Belle Isle, Cabot Strait Labrador; West River, Sheet Harbour.	USA	Fred Whoriskey	£300,000
Canada	C19	<b>Stable isotope ratios to infer trophic structure and condition of Atlantic salmon during their sea.</b>	Ongoing	Improve understanding of marine ecology of salmon through status of trophic state and condition. Questions to be addressed include: are trophic states of 1SW non-maturing fish similar between NAC and NEAC origin salmon?; are trophic states of 1SW non-maturing fish different from those of maturing 1SW fish of the same cohort? Can this tell us anything about when these different maturity groups separate in the North Atlantic? Has there been a trophic state change between West Greenland and return to home rivers as 2SW salmon?	2008 - 2010	Life history/ biological processes	Post-fishery recruitment marine factors	West Greenland and from salmon returning to the index rivers of Eastern Canada.	Greenland	Gerald Chaput, Tim Sheehan	£18,000 (excludes cost of purchase of samples)
Canada	C20	<b>Identification of essential habitats for repeat spawning Atlantic salmon of Inner Bay of Fundy origin</b>	Ongoing	Identify the freshwater and marine habitats used by repeat spawning Atlantic salmon of inner Bay of Fundy (IFB) origin for reconditioning until their return as repeat spawners, and identify the sites and times of mortality for those that fail to return.	2008 - 2010	Distribution/ migration the sea	Migratory behaviour of individual fish	Primarily the Big Salmon River and possibly other inner Bay of Fundy rivers (i.e. Stewiacke) as well as the Saint John River and Bay of Fundy.		Gilles L Lacroix, Ian Jones	£15,000. In-kind contributions from Fort First Nation.

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Canada	C21	<b>Genomic basis of adaptive divergence and marine survival among Atlantic salmon populations</b>	Ongoing – New	Elucidate the genetic basis of adaptive divergence and marine survival in Atlantic salmon populations from eastern Canada. Contribute to the identification of management units.	2010 - 2013	Distribution/ migration the sea	Origin of catches in directed fisheries	Eastern Canada: Québec, Maritimes, Newfoundland and Labrador	Norway, USA	Louis Bernatchez, Mélanie Dionne, F. O'Reilly, Vincent Bourret	£64,500
Denmark - Greenland	D1	<b>West Greenland Salmon Fish Sampling Programme</b>	Ongoing	Continue time series of data on the continent of origin biological characteristics of salmon in the fishery. Provide data on mean weight and length and continent of origin for input to models. Collect information on the recovery of internal and external tags. Collect other additional biological samples as required.	Annual	Distribution/ migration the sea	Origin of catches in directed fisheries	West Greenland	USA, UK, Ireland, Canada	Helle Siegstad	£88,200
European Union	E1	SALMODEL Concerted Action co-ordinated approach towards development of a scientific basis for management of wild Atlantic salmon in the North-East Atlantic	Completed	Improve ability to set conservation limits and examine methods of estimating pre-fishery abundance (PFA) to determine how these PFA estimates can be used to provide catch advice.	2000 - 2002	Long-term monitoring	Time series of marine survival relation to environmental parameters	Desk study	Norway, Iceland, Canada	Dr Walter Crozier	
European Union	E2	<b>SALSEA-Merge: Advancing understanding of Atlantic salmon at sea: Merging genetics and ecology to resolve stock – specific migration and distribution patterns.</b>	Ongoing	Merge genetic and ecological investigations to advance understanding of stock specific migration and distribution patterns and overall ecology of the marine life of Atlantic salmon and gain an insight into the factors resulting in recent significant increases in marine mortality.	2008 - 2011	Distribution/ migration the sea	Distribution of salmon in the sea	North-East Atlantic with marine surveys off coast of Ireland and around the Faroes and in the Northern Norwegian Sea and Barents Sea	Denmark, Finland, France, Faroes, Iceland, Ireland, Norway, Spain, UK	Jens Christian Holten	£1.8 million
European Union - Denmark	De1	Estuarine migration of smolts in Rivers Skjern Å (North Sea) and River Guden Å	Completed	To assess the effect of restoration of habitat in the River Skjern Å on the smolt runs of salmon and sea trout, in particular with regard to predation by piscivorous birds. To investigate the migration of salmon smolts in the Guden Å.	2002 - 2003	Distribution/ migration the sea	Migratory behaviour of individual fish			Gorm Rasmussen	
European Union - Denmark	De2	Mortality of Atlantic salmon smolts during estuary migration	Completed	Estimate mortality of salmon smolts during migration through estuaries and compare the return ratio of wild stocked ½- and one-yearlings.	2000 - 2008	Distribution/ migration the sea	Migratory behaviour of individual fish	River Skjern Å (North Sea) and River Guden Å (Kattegat) and estuaries		Anders Koed, Kim Aarestrup	
European Union - Denmark	De3	<b>Salmon Rehabilitation Plan: monitoring numbers of spawning and nursery areas four Atlantic Salmon rivers</b>	Ongoing	The Danish national salmon rehabilitation plan describes four rivers with natural wild salmon populations. The project monitors the effect of the rehabilitation plan on the development of the populations (the goal is at least 1,000 spawners in each river to fulfil the plan). This will allow estimates of marine mortality of salmon to be made.	2008 -	Distribution/ migration the sea	Migratory behaviour of individual fish	River Skjern Å, River Ribe Å, Storå and Varde Å. The rivers flowing into the North Sea		Anders Koed, Einar Nielsen	£14,000
European Union - Finland	Fi1	<b>Long-term variation in population dynamics, life history characteristics, sea growth and origin (wild/reared) of salmon in the rivers Teno (Tana) and Näätämöjoki (Neidenelva)</b>	Ongoing	Collect long-term data on variation in the stock components, life histories, sea growth and abundance of escaped farmed salmon in the salmon stocks of the rivers Teno and Näätämöjoki. Relate the population dynamics of the juvenile salmon and returning adult salmon in preceding and subsequent generations	Annual	Long-term monitoring	Time series of marine survival/growth estimates	Northern Finland and Norway	Norway	Jaakko Erkinaro	£275,000
European Union - Finland	Fi2	<b>Joint use of high-throughput assay infrastructure in Atlantic salmon</b>	Ongoing – New	The key aims of the project include: I) A concerted effort to identify genomic regions that affect ecologically and economically important phenotypic traits in domestic and wild Atlantic salmon; II) efficient joint utilization of state-of-the-art Nordic genomics infrastructure to generate large-scale salmon SNP datasets;	2009 - 2010	Distribution/ migration the sea	Origin of catches in directed fisheries	Norway and Finland	Norway	Craig Primmer	£50,000
European Union - France	Fr1	Evolution of biological characteristics in Atlantic salmon from all the Armorican massif (Brittany and Low-Normandy, France)	Completed	Examine relationships between the cumulative effects of climate warming and other anthropogenic stresses and changes in biological features in populations in the Southern part of the European distribution range of the species.	1972 - 2005	Life history/ biological processes	Freshwater factors	Armorican massif rivers, France		Jean-Luc Baglinière	
European Union - France	Fr2	<b>The sea survival of Atlantic salmon from the River Scorff Brittany</b>	Ongoing	Estimation and long-term monitoring of survival at the southern part of the European distribution range of the species.	Annual	Long-term monitoring	Time series of marine survival/growth estimates	River Scorff (Southern Brittany)		Etienne Prévost	£165,000
European Union - France	Fr3	<b>Atlantic salmon metapopulation investigation in Normandy rivers</b>	Ongoing	Estimate exchanges between rivers flowing into the Saint-Michel Bay and the impact on management of salmon populations.	2007-2010	Distribution/ migration the sea	Origin of catches in directed fisheries	Rivers flowing into Mont Saint-Michel Bay, Normandy		Jean-Luc Baglinière	£50,000
European Union - Ireland	Ir1	Assessment of the levels of the parasite <i>Lepeophtheirus salmonis</i> on Atlantic salmon post-smolts in	Completed	Determine whether sea lice from marine salmon farms is a contributory factor in increased marine mortality of Atlantic salmon post-smolts migrating from bays with sea	2002	Specific natural and anthropogenic factors	Fish farms	South-West Coast (Kenmare Bay), West Coast (Killary Harbour, Bertraghboy Bay, Clew Bay),		Paddy Gargan	

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		salmon aquaculture bays along Ireland's western seaboard		aquaculture. Gather information on salmon post migration patterns.				West Coast (Inver Bay).			
European Union - Ireland	Ir2	Oceanic factors influencing marine survival of Irish salmon stocks	Completed	Provide information on marine survival at various stages of ocean migration.	2001 - 2005	Long-term monitoring	Time series of marine survival in relation to environmental parameters	Desk study utilising oceanic data from around North Atlantic	USA	Niall O'Maoileidigh, Kevin Friedland	
European Union - Ireland	Ir3	Sustainable management of interactions between aquaculture and wild salmonid fish	Completed	Assess efficacy of prophylactic treatments for salmon smolts migrating through aquaculture bays.	2003 - 2006	Specific natural and anthropogenic factors	Fish farms	Kilkerran Bay, Bertraghbouy Bay, Connemara	UK, Norway	Paddy Gargan, Niall O'Maoileidigh	
European Union - Ireland	Ir4	Early distribution and migration of Atlantic salmon smolts off the coast of Ireland	Completed	Test new pelagic trawl in open waters off Irish coast and familiarise staff on the operation and development of the trawl for further surveys in 2008 and 2009; obtain samples of post-smolts for background and genetic analysis; relate run-timing, timing of migration, swimming speed, growth, etc to oceanographic parameters.	2007	Development of methods	Post-smolt survey methods	North-west coast of Ireland		Niall O'Maoileidigh	
European Union - Ireland	Ir5	Migration of salmon in estuarine and coastal waters	Completed	Investigate the timing, route of migration and aspects of the biology of migrating ranched salmon smolts in comparison to the native wild smolt migration.	2005 - 2008	Distribution/ migration in the sea	Migratory behaviour of individual fish	Burrishoole catchment, Newport, Clew Bay, Co. Mayo	UK	Russell Poole, Deirdre Cotter, Niall O'Maoileidigh	
European Union - Ireland	Ir6	National Development Plan - National Genetic Stock Identification Project	Completed	Identify and map discrete spawning areas within tributaries of Irish salmon rivers and collect juvenile salmon for establishment of genetic baseline for mixed sample analysis. Undertake molecular genetic analysis of juvenile salmon tissue and adult scales to determine relative contributions of different baseline river populations within mixed samples.	2006 - 2008	Distribution/ migration in the sea	Origin of catches in directed fisheries	All Irish rivers	UK, Spain	Tom Cross, Paddy Gargan, Philip McGinnity	
European Union - Ireland	Ir7	Interactions between aquaculture and wild salmonid fish	Completed	Assess efficacy of prophylactic treatments for salmon smolts migrating through aquaculture bays.	2008 - 2009	Specific natural and anthropogenic factors	Fish farms	Burrishoole, Shannon, Lee and Screebe, and drift net fishery along Irish coast		D Jackson	
European Union - Ireland	Ir8	<b>Marine survival of wild and hatchery reared salmon: National coded wire tagging and tag recovery programme and Burrishoole wild salmon census</b>	<b>Ongoing</b>	Provide information on marine survival and exploitation rates by commercial fisheries; estimate contribution of individual river stocks to catches; examine performance of selected experimental groups; and evaluate potential for salmon ranching.	Annual	Long-term monitoring	Time series of marine survival/growth estimates	Tag recovery from around North Atlantic salmon census facility, Newport	Norway, UK, Faroes, France, Spain, Germany, Denmark	Niall O'Maoileidigh, Russell Poole	£372,000
European Union - Sweden	Sw1	<b>Long-term variation in population dynamics, life-history and exploitation of salmon stocks in monitored rivers</b>	<b>Ongoing</b>	Estimate long-term variation of survival in different stages, life-history characteristics and growth of wild salmon in the River Åtran and its major tributary. Estimate sea survival, growth and exploitation for wild fish in the River Åtran and wild and reared fish in the rivers Lagan and Nissan.	Annual	Long-term monitoring	Time series of marine survival/growth estimates	Rivers Åtran, Lagan and Nissan		Lars Karlsson	£8,500
European Union - England and Wales	Ew1	Salmonid migration and climate change	Completed	Describe and model the environmental factors affecting the migration of salmonids and investigate the effects of climate change on salmonid migration and survival in fresh water and the sea.	1999 - 2004	Distribution/ migration in the sea	Migratory behaviour of individual fish	Coastal waters around the UK extending to salmon feeding grounds in Faroes and Greenland Seas		Andrew Moore	
European Union - England and Wales	Ew2	Impacts of agricultural contamination on wild salmonids	Completed	Identify and describe the effects of environmental levels of agricultural pesticides on salmonid embryo survival, smolt emigration and marine survival and model the potential impacts at the population level. In addition, the role of pheromones in sea trout biology was investigated in order to predict the effects of water quality on sea reproduction.	1999 - 2004	Specific natural and anthropogenic factors	Pollutants	England and Wales	Sweden and Canada	Andrew Moore	
European Union - England and Wales	Ew3	Impact of intensive in-river aquaculture on wild salmonids	Completed	Describe the nature and extent of the impact of aquaculture contaminants derived from intensive freshwater aquaculture (effluents, pesticides, antibiotics and hormones) on reproduction and migration of wild salmonids.	2001 - 2005	Specific natural and anthropogenic factors	Fish farms	England and Wales		Andrew Moore	
European Union - England and Wales	Ew4	Modelling the bioenergetics of Atlantic salmon migration	Completed	Model the energetic requirements of salmon during marine migrations and predict the effects of environmental and oceanographic changes on smolt growth and survival.	2002 - 2005	Distribution/ migration in the sea	Migration and bioenergetic modelling	England and Wales		Andrew Moore	
European Union - England and Wales	Ew5	Cardiff Bay Fisheries Monitoring Programme	Completed	Assess the impact of Cardiff Bay barrage on salmon stocks of the rivers Taff and Ely.	1990 - 2006	Specific natural and anthropogenic factors	Obstructions to fish movement	Cardiff Bay at mouth of rivers Ely, South Wales, UK		Peter Gough,	

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European Union - England and Wales	Ew6	Atlantic Salmon Arc Project, A	Completed	Define exploitation at sea on a regional basis using genetic tools. Create a long-term database for these studies and create an international management tool to inform decision-making.	2004 - 2008	Distribution/ migration the sea	Origin of catches in directed fisheries	Europe, North Atlantic	Spain, France, Ireland, Scotland, USA, Iceland	Dylan Bright	
European Union - England and Wales	Ew7	Diffuse pollution and freshwater populations	Completed	Investigate the role of diffuse aquatic contaminants regulating populations of freshwater fish with particular reference to salmonid stocks and fisheries.	2005 - 2010	Specific natural and anthropogenic factors	Pollutants	England and Wales		Andrew Moore	
European Union - England and Wales	Ew8	The influence of the freshwater environment on salmonid populations	Completed	Investigate the impact of environment change on juvenile salmon production and ecology. One aspect of the research directly related to marine survival is the potential role of assessment techniques (trapping, anaesthetising, tagging) in influencing marine survival.	2005 - 2010	Life history/ biological processes	Freshwater factors	England and Wales		Andrew Moore	
European Union - England and Wales	Ew9	Factors affecting the distribution and behaviour of salmonid populations	Completed	Investigate the habitat requirements of adult salmon within the estuarine and freshwater environments. A key element of the research is to investigate how changes in prey availability within the marine environment may influence recruitment of stocks between years.	2005 - 2010	Life history/ biological processes	Freshwater factors	England and Wales		Andrew Moore	
European Union - England and Wales	Ew10	<b>Genetic sampling to type British salmon stocks</b>	Ongoing	Coordinate and support the establishment of baseline information on the genetic character of breeding populations within and among rivers in Britain.	2008 - 2010	Distribution/ migration the sea	Origin of catches in directed fisheries	England, Wales, Northern Ireland and Scotland	Scotland, Northern Ireland	Miran Aprahamian	£60,000
European Union - England and Wales	Ew11	<b>Deriving estimates of marine survival and exploitation for monitored river stocks in England and Wales</b>	Ongoing	Establish 'monitored' rivers where estimates of marine survival can be derived and compared with other North Atlantic stocks.	Annual	Long-term monitoring	Time series of marine survival/growth estimates	River Dee (North Wales), River Tamar (SW England)		Ian Davidson, Robert Hillman, Ian Russell	£120,000
European Union - England and Wales	Ew12	<b>The marine life of Atlantic salmon: evidence from the microchemistry of scales</b>	Ongoing	The objectives include measuring the stable isotope trace element compositions from salmon scales in relation to variations in the marine environment and developing a model to predict impacts of changes in the marine environment on return rates of salmon.	2007 - 2010	Life history/ biological processes	Post-fishery recruitment marine factors	England and Wales		Clive Trueman	£22,200
European Union - England and Wales	Ew13	<b>Development and application of salmonid life cycle models</b>	Ongoing - New	The objectives include reviewing available models to assess suitability and to build on existing models or develop new models to inter alia compare marine and freshwater factors affecting stocks.	2009 - 2013	Life history/ biological processes	Freshwater factors	England and Wales		Ted Potter	£52,500
European Union - England and Wales	Ew14	<b>The impacts of contaminants and temperature on freshwater fish populations</b>	Ongoing - New	Undertake further studies of the impacts of contaminants derived from intensive agriculture and aquaculture facilities on wild salmonids and investigate the implications of predicted climate change scenarios on impacts of different sources of diffuse and point source pollution on wild fish populations.	2009 - 2014	Specific natural and anthropogenic factors	Pollutants	England and Wales		Andy Moore	£159,000
European Union - England and Wales	Ew15	<b>Impacts on juvenile salmonid populations from a changing freshwater environment.</b>	Ongoing - New	Investigate how predicted changes in the freshwater environment might impact on juvenile salmonid populations and how changing conditions during the life history stages may influence their behaviour and subsequent survival within the marine environment.	2009 - 2014	Specific natural and anthropogenic factors	Freshwater factors	England and Wales		Bill Riley	£180,600
European Union - Northern Ireland	Ni1	Development of conservation plan for pre-fishery abundance and management of the Foyle salmon fishery	Completed	To build upon the existing Foyle salmon management system, to develop it into a precautionary catch advice framework that fully takes account of biological data, stock abundance and which fulfils all the main requirements of the Precautionary Approach.	2005 - 2008	Long-term monitoring	Time series of marine survival relation to environmental parameters	Foyle area, Ireland	Ireland, France, Scotland	Patrick Boylan	
European Union - Northern Ireland	Ni2	<b>The marine survival of Atlantic salmon from the River Bush, Northern Ireland</b>	Ongoing	Investigate factors influencing the survival at sea of salmon smolts migrating from the River Bush until they return as adults.	Annual	Long-term monitoring	Time series of marine survival/growth estimates	River Bush, N. Irish/Irish coastal waters and distant-water fisheries	Ireland (tag recovery programme)	Richard Kennedy	£60,000
European Union - Scotland	Sc1	Testing and development of Inshore of Marine Research (IMR), Bergen, Norway, salmon trawl gear	Completed	Test a prototype trawl developed by IMR, Bergen, Norway, which, rather than capturing post-smolts, records, by use of CCTV, their passage as they pass through an open-ended trawl net. A supplementary objective, dependent on the success of the gear trials, is to conduct a post-smolt survey at the shelf edge.	2006	Development of methods	Post-smolt survey methods	Scalloway Deeps (Shetland), the Minches	Norway	Jens Christian Holm (Norway), Julian MacLean, Dick St	

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European Union - Scotland	Sc2	Protecting salmonid fisheries from seal damage	Completed	Develop and apply new molecular tools for discriminating among species of fish in the diets of seals from their remains in scats. Test the possibility of using molecular tools to quantify the occurrence of diet components. Identify factors influencing the migration routes of salmon in estuaries and relate to the presence of predators. Recommend strategies for the most effective deployment of methods for protecting salmonid stocks in inshore waters.	2003 - 2008	Specific natural and anthropogenic factors	Predation	Principally North-East Scotland (Cromarty Firth). Possible work in other estuaries and extension in West Coast		John Armstrong (Fishery Research Services)	
European Union - Scotland	Sc3	<b>Post-smolt mortality of Atlantic salmon</b>	Ongoing	Assess post-smolt mortality rates of Atlantic salmon in three Scottish rivers, and the contribution of these salmon to fisheries that exploit them.	Annual	Long-term monitoring	Time series of marine survival/growth estimates	North Esk, Western catchment River Dee, River Conon salmon fishery district		Julian Maclean (North and Dee), John Armstrong (River Conon)	Approximately £50,000
European Union - Scotland	Sc4	<b>Analysis of post-smolt life history by scale reading</b>	Ongoing	Investigate the relationship between growth and mortality particularly during the marine phase, by analysis of growth patterns.	Annual	Long-term monitoring	Time series of marine survival relation to environmental parameters	Samples from around Scotland North Esk and Girnock Burn in particular	USA and Canada	Julian Maclean	Approximately £10,000
European Union - Scotland	Sc5	<b>Fisheries-induced evolution</b>	Ongoing	Determine the incidence and extent of heritable genetic changes in salmon stocks due to fishery programmes.	2007-2010	Distribution/ migration the sea	Origin of catches in directed fisheries	Scotland and across European species' distribution, including marine migration routes.	Austria, Norway, France, Denmark, Belgium, UK, Netherlands, Finland, Germany	Ulf Dieckman, John Gilbey, Philip McGinnity	Scotland £52,000 (FRS), Ireland £3,500 (travel for meeting costs only)
European Union - Scotland	Sc6	<b>Size and condition of returning grilse (ISW) and MSW salmon</b>	Ongoing	Investigate decadal trends in the size and condition of adult salmon returning to Scotland.	Annual	Life history/ biological processes	Post-fishery recruitment marine factors	Six locations in Scotland, in particular North Esk.		Philip Bacon	£30,000
European Union - Scotland	Sc7	<b>Development of a General Species Model of within river population structuring in Scottish Atlantic salmon (POPMOD)</b>	Ongoing – New	To improve the scientific basis for inter alia setting biologically appropriate conservation limits, providing advice on conservation and restoration initiatives, accurately and cost-effectively monitoring the status of salmon stocks. This project will provide baseline information in support of project E2.	2008-2011	Distribution/ migration the sea	Origin of catches in directed fisheries	River systems across Scotland		Dr. Eric Verspoor	£267,000
European Union - Scotland	Sc8	<b>Focusing Atlantic salmon management on Atlantic salmon (FASMOP)</b>	Ongoing – New	To establish the number and spatial boundaries of breeding populations of salmon within any Scottish system; establish the ancestral relationships and functional biological differences between wild salmon stock components across Scottish rivers; improve local management practice and increase the focus of management on local breeding populations. This project will provide baseline information in support of project E2.	2009-2011	Distribution/ migration the sea	Origin of catches in directed fisheries	River systems across Scotland		Dr. Eric Verspoor	£140,000
Norway	N1	Identification of salmon by geochemical signatures; further development and testing of methods	Completed	Main objectives: test if geochemical signatures are consistent from year to year; test if geochemical signatures of salmon scale samples can be used to discriminate among fish from different rivers; develop analytical procedure (otolith core sampling, chemical and statistical analysis) for application of this method in ecological studies of Atlantic salmon.	2002	Life history/ biological processes	Post-fishery recruitment marine factors	Laboratory study		Peder Fiske	
Norway	N2	Development of models to predict marine survival and return of salmon to Norway	Completed	Identify and examine the feasibility of applying time series of marine environmental data, ecoplankton productivity, productivity of pelagic fish and salmon history information for model development. Develop appropriate models.	2002 - 2005	Long-term monitoring	Time series of marine survival relation to environmental parameters	Desk study of existing data	USA, Canada, EU	Lars Petter Hanssen	
Norway	N3	By-catch in pelagic fisheries as a population-regulating factor in salmon stocks	Completed	Investigate the extent of by-catch of salmon post-smolt and develop management advice to reduce by-catch while maintaining catch rates in the mackerel fishery.	2001 - 2005	Distribution/ migration the sea	By-catches in pelagic fisheries	Norwegian Sea	Russia, Scotland	Jens Christian Holm	
Norway	N4	Sea lice as a population-regulating factor in Norwegian salmon: study effects of measures taken and fish management	Completed	Further clarify the effects of sea lice on wild salmon populations and propose measures to reduce sea lice infections in wild salmon and develop alternative measures in critically affected stocks.	2002 - 2005	Specific natural and anthropogenic factors	Fish farms	Sognefjord and Altafjord		Jens Christian Holm	
Norway	N5	Distribution of salmon in relation to environmental parameters and in the North Atlantic – capture tagging and release of salmon with data storage tags (DSTs)	Completed	Investigate the temporal and spatial distribution of individual tagged salmon in the Norwegian Sea and adjacent areas with emphasis on spatial distribution and temperature preferences; growth in relation to environmental parameters; and diurnal vertical distribution.	2003 - 2006	Distribution/ migration the sea	Migratory behaviour of individual fish	Northern North Sea, Norwegian Sea	Faroe Islands, Iceland	Marianne Holm	
Norway	N6	Temporal variation in abundance of the northern-most populations of Atlantic salmon with emphasis on the River Tana	Completed	Examine the influence of ocean climate, predation, and fisheries and smolt production on the abundance of salmon in the River Tana	2002 - 2006	Long-term monitoring	Time series of marine survival relation to environmental parameters	River Tana	Finland, Russia, Canada	Martin Svenning	

Jurisdiction	Project N	Title	Status	Summary of Objectives	Research Dates	Topic Area	Objective/Issue	Area of Research	Collaborating Countries	Coordinating Scientist	Annual Expenditure
Norway	N7	The importance of early marine feeding on the growth and survival of Atlantic salmon post-smolts in Norwegian fjords.	Completed	Analyse spatial variation in early marine post-smolt feeding and growth along a north-south geographical scale; investigate how post-smolt feeding and growth associated with timing of smolt descent, "marine prey availability, parasite infection", fjord migration; and abiotic factors.	2002 - 2007	Life history/ biological processes	Pre-fishery recruitment marine factors	Central and Northern Norway	Canada	Bengt Finstad	
Norway	N8	Distribution and ecology of post-smolts and salmon at sea.	Completed	Analyse age, growth and migratory paths in relation to environmental conditions and competitors so as to enhance understanding of salmon marine life-history in order to explain observed variations in salmon survival.	2002 - 2007	Distribution/ migration the sea	Distribution of salmon in the sea	West of Ireland – Faroes, north of North Sea, Norwegian Sea	Faroe Islands	Marianne Holm	
Norway	N9	Dispersal of salmon lice in Norwegian fjords.	Completed	Estimate and describe to what extent free-living salmon lice larvae disperse from wild and farmed sources within and between areas.	2007	Specific natural and anthropogenic factors	Fish farms	Hardangerfjord, Norway		Karin Kroon-Boxa	
Norway	N10	Experimental tagging program investigating the behaviour of escaped farmed salmon: pilot study.	Completed	Examine the migration of escaped large farmed salmon and test if they are transported with the currents and appear in Norwegian waters.	2006 - 2007	Specific natural and anthropogenic factors	Fish farms			Lars Petter Hanser	
Norway	N11	Individual assignment of salmon caught in the ocean to region of origin	Completed	Investigate genetic variation in Norwegian Atlantic salmon populations on different spatial scales. Provide calibrated data from micro-satellite markers for a database. Analyse samples caught in the ocean and assign to country/region of origin.	2006 - 2009	Distribution/ migration the sea	Origin of catches in directed fisheries	Norway	Finland	Oystein Skaala, Vidar Wennevik	
Norway	N12	Migratory behaviour of smolts and post-smolts of cultured Atlantic salmon	Completed	Study the change in migratory behaviour from smolt to post-smolt during the post-smolt stages in cultured Atlantic salmon	2008 - 2009	Distribution/ migration the sea	Migratory behaviour of individual fish	Masfjorden, western Norway		Ove Skilbrei	
Norway	N13	<b>Significance of salmon lice for growth and survival of salmon in the sea</b>	<b>Ongoing</b>	Estimate the effects of salmon lice on post-smolt growth and survival, dependent on release site and time and density of release.	2006 - 2010	Specific natural and anthropogenic factors	Fish farms	Western Norway, River Dale, Fiskeakvafabrikk Aquaculture Station		Ove Skilbrei	£75,000
Norway	N14	<b>Marine survival, growth and exploitation of salmon from the Rivers Figgjo, Imsa, Drammen and Halselv</b>	<b>Ongoing</b>	Estimate marine survival, marine growth and change in marine exploitation of salmon from four rivers in Norway. Develop predictive models.	Annual	Long-term monitoring	Time series of marine survival/growth estimates	Rivers Figgjo, Imsa, Drammen and Halselv with tag recovery programme in fisheries along Norwegian coast and elsewhere		Lars Petter Hanser, Nina Jonsson, Arne Johan Jensen	£134,000
Norway	N15	<b>Population-limiting mechanisms for Atlantic salmon during estuarine and coastal migration (SALPoP)</b>	<b>Ongoing</b>	Map migratory behaviour and quantity where, when and why mortalities occur; correlate data on migration and mortalities with health status and major population-limiting factors; develop improved mitigating action management strategies to contribute to sustainability of salmon populations.	2008 - 2012	Distribution/ migration the sea	Migratory behaviour of individual fish	Eresfjord in Møre and Romsdal, Norway	Sweden, UK, Canada	Bengt Finstad	£200,000
Norway	N16	<b>The Hardangerfjord salmon project</b>	<b>Ongoing</b>	Improve sea lice monitoring and management; evaluate success of sea lice management strategies; quantify abundance and distribution of salmon lice in the Hardangerfjord area; analyse data sets for possible risk factors associated with varying lice infection pressure.	2007 – 2010	Specific natural and anthropogenic factors	Fish farms	Hardangerfjord on the Norwegian west coast	Canada, UK	Bengt Finstad	-
Norway	N17	<b>Origin of Atlantic salmon off Svalbard</b>	<b>Ongoing – New</b>	Identify the origin of Atlantic salmon occurring in gannet fisheries at Isfjorden, Spitsbergen, by life history (age and growth) and genetic analyses.	2008 – 2011	Distribution/ migration the sea	Origin of catches in directed fisheries	Isfjorden, Spitsbergen		Arne Johan Jensen	£7,500
Norway	N18	<b>SALMOTRACK - Electronic tracking of northern anadromous salmonids</b>	<b>Ongoing – New</b>	Track different life-stages of northern Atlantic salmon and other anadromous species in river, fjord and open ocean.	2006 - 2012	Distribution/ migration the sea	Migratory behaviour of individual fish	Northern Norway (2007-2012); Western Norway (2010); Western Norway (2006)	Denmark, UK, Finland, USA, Japan, Ireland, Canada	Audun H. Rikardsen	£250,000
Russian Federation	R1	Assessment of by-catch of post-smolts of Atlantic salmon in pelagic fisheries in the Norwegian Sea	Completed	Assess the occurrence of post-smolts in catches by Russian vessels engaged in the pelagic fisheries for mackerel, blue whiting and herring.	2002 - 2007	Distribution/ migration the sea	By-catches in pelagic fisheries	Norwegian Sea		Boris Prischeva, Alexander Zubchev	
Russian Federation	R2	<b>Monitoring of the stock status, abundance assessment and provision of advice on the allowable level of harvest of Atlantic salmon</b>	<b>Ongoing</b>	Estimate survival of juveniles and adult return rates, estimate natural and fishing mortality, study population dynamics; assess population sizes and spawning escapement; and estimate allowable catch.	Annual	Long-term monitoring	Time series of marine survival/growth estimates	Atlantic salmon rivers of the Kola Peninsula, Archangel Region and Karelian Republic		Sergey Prusov, Gevorg Ustuzhinsky	£80,000
Russian Federation	R3	<b>Establishing a genetic baseline for northern salmon populations across the Russian – Norwegian border</b>	<b>Ongoing – New</b>	Establish a genetic baseline of sufficient resolution for the purposes of partitioning bag net catches between Russian and Norwegian regions.	2009 - 2010	Distribution/ migration the sea	Origin of catches in directed fisheries	Northern Norway, North West of Russian Federation	Norway	Dr. Vidar Wennevik (IMR), Dr. Sergey Prusov (PINRO)	£141,950

