The development of tools for tracing and evaluating the genetic impact of fish from aquaculture: “AquaTrace”

From 2012-11-01 to 2016-10-31, closed project

<table>
<thead>
<tr>
<th>Project details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total cost:</strong></td>
</tr>
<tr>
<td><strong>EU contribution:</strong></td>
</tr>
<tr>
<td><strong>Coordinated in:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Topic(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBBE.2012.1.2-12 - Providing molecular tools for assessing and monitoring the potential genetic impact of aquaculture on native populations (The Ocean of Tomorrow)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Call for proposal:</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP7-KBBE-2012-6-singlestage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Funding scheme:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP-TP - Collaborative Project targeted to a special group (such as SMEs)</td>
</tr>
</tbody>
</table>

**Objective**

The genetic changes associated with domestication in aquaculture pose an increasing threat to the integrity of native fish gene pools. Consequently, there is a burgeoning need for the development of molecular tools to assess and monitor the genetic impact of escaped or released farmed fish. In addition, exploration of basic links between genetic differences among farmed and wild fish and differences in important life-history traits with fitness consequences are crucial prerequisites for designing biologically informed management strategies. The project “AquaTrace” will establish an overview of current knowledge on aquaculture breeding, genomic resources and previous research projects for the marine species seabass, seabream and turbot. The project will apply cutting-edge genomic methods for the development of high-powered, cost-efficient, forensically validated and transferable DNA based tools for identifying and tracing the impact of farmed fish in the wild. Controlled experiments with wild and farmed fish and their hybrids will be conducted with salmon and brown trout as model organisms using advanced “common garden” facilities. These experiments will elucidate the fundamental consequences of introgression by pinpointing and assessing the effects on fitness of specific genomic regions. Generated insights will form the basis of a risk assessment and management recommendations including suggestions for mitigation and associated costs. This information and the developed molecular tools will be available as open-access support to project participants and external stakeholders including the aquaculture industry. The project is expected to facilitate technology transfer to the aquaculture sector by promoting better tailored breeding practices and traceability throughout production chain. Overall this initiative will support the development of sustainable European aquaculture and provide “Good Environmental Status” in line with the Marine Strategy Framework Directive.

**Related information**

<table>
<thead>
<tr>
<th>Result In Brief</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traceability tools for cutting edge aquaculture</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Report Summaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploitable results – Aquatrace video</td>
</tr>
<tr>
<td>Exploitable results – Bioinformatic pipeline for ddRAD (Double Digest RAD sequencing).</td>
</tr>
</tbody>
</table>
Exploitable results – Documented trait (growth) differences among wild, farmed and introgressed salmon, kept at different temperatures

Exploitable results – Genomic sequences and genome assembly for seabass and seabream

Exploitable results – Review of assignment methods and software in traceability / aquaculture

Exploitable results – SNPs identified from ddRAD sequencing - genetic variation identified - for populations of turbot, European seabass and gilt-head (sea) bream

Exploitable results – Salmon and trout families (including extracted DNA and RNA) for analysing trait differences among farmed, introgressed and wild fish

Exploitable results – Sample collection of wild and farmed Seabass, Seabream and turbot covering both Atlantic and Mediterranean populations and farms

Exploitable results – Survey on selective breeding programs implemented in the European aquaculture industry

Exploitable results – Web based presentations of species leaflets for seabass, seabream, turbot, Atlantic salmon and brown trout, including available biological information such as life-history traits, genetic and genomic characteristics, ecological, conservation, fisheries and aquaculture specific issues

Final Report Summary - AQUATRACE (The development of tools for tracing and evaluating the genetic impact of fish from aquaculture: “AquaTrace”)

Coordinator

DANMARKS TEKNISKE UNIVERSITET
ANKER ENGELENDSVEJ 1 BYGNING 101 A
2800 KGS LYNGBY
Denmark
See on map

Activity type: Higher or Secondary Education Establishments

Administrative contact: Einar Eg Nielsen
Tel.: +4535883115
Fax: +4535883150
Contact the organisation

Participants
HAVFORSKNINGSINSTITUTTET
NORDNESGATEN 50
5817 BERGEN
Norway
EU contribution: EUR 394 148

Activity type: Higher or Secondary Education Establishments
Administrative contact: Helene Pedersen
Tel.: +4755238500

UNIVERSITA DEGLI STUDI DI PADOVA
VIA 8 FEBBRAIO 2
35122 PADOVA
Italy
EU contribution: EUR 202 803

Activity type: Higher or Secondary Education Establishments
Administrative contact: Daniela Garbo
Tel.: +390498272601
Fax: +390498272604

UNIVERSIDAD DE SANTIAGO DE COMPOSTELA
COLEXIO DE SAN XEROME PRAZA DO OBRADOIRO S/N
15782 SANTIAGO DE COMPOSTELA
Spain
EU contribution: EUR 229 300

Activity type: Higher or Secondary Education Establishments
Administrative contact: Martin Cacheiro Martinez
Tel.: +34 881 816233
Fax: +34 881 816263

KATHOLIEKE UNIVERSITEIT LEUVEN
OUDE MARKT 13
3000 LEUVEN
Belgium
EU contribution: EUR 407 516

Activity type: Higher or Secondary Education Establishments
Administrative contact: Sarah Malevé
Tel.: +3216320611
Fax: +32 16 3 26515

Contact the organisation
TRACE Wildlife Forensics Network Limited
HIGH STREET 121 HUGHES PARRY AND CO
LL57 1NT BANGOR GWYNEDD
United Kingdom
EU contribution: EUR 202 890,40

Activity type: Higher or Secondary Education Establishments
Administrative contact: Rob Ogden
Tel.: +44 131 3140317
Fax: +44 131 3140376
Contact the organisation

JRC -JOINT RESEARCH CENTRE- EUROPEAN COMMISSION
Rue de la Loi 200
1049 BRUSSELS
Belgium
EU contribution: EUR 121 799,60

Activity type: Higher or Secondary Education Establishments
Administrative contact: David Walker
Tel.: +39 0332 786375
Fax: +39 0332 786465
Contact the organisation

INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE
Rue De L'Universite 147
75338 PARIS CEDEX 07
France
EU contribution: EUR 97 615,20

Activity type: Higher or Secondary Education Establishments
Administrative contact: René Jean Paul Guyomard
Tel.: +33134652791
Fax: +33134652390
Contact the organisation

BANGOR UNIVERSITY
COLLEGE ROAD
LL57 2DG BANGOR
United Kingdom
EU contribution: EUR 145 000

Activity type: Higher or Secondary Education Establishments
Administrative contact: Christine Davey
Tel.: +44 1248 382136
Fax: +44 1248 382042
Contact the organisation
THE UNIVERSITY OF STIRLING
FK9 4LA STIRLING
United Kingdom
EU contribution: EUR 188 899
See on map

Activity type: Higher or Secondary Education Establishments

Administrative contact: Eric Gibb
Tel.: +44 1786 466447
Fax: +44 1786 466688
Contact the organisation

Greece
ARISTOTELEIO PANEPISTIMIO THESSALONIKIS
KEDEA BUILDING, TRITIS SEPEMVRIOU, ARISTOTLE UNIV CAMPUS
54636 THESSALONIKI
EU contribution: EUR 60 000
See on map

Activity type: Higher or Secondary Education Establishments

Administrative contact: Georgia Petridou
Tel.: +302310995140
Fax: +302310853283
Contact the organisation

Italy
ISTITUTO SUPERIORE PER LA PROTEZIONE E LA RICERCA AMBIENTALE
VIA VITALIANO BRANCATI 48
00144 ROMA
EU contribution: EUR 45 043
See on map

Activity type: Higher or Secondary Education Establishments

Administrative contact: Giovanna Marino
Tel.: +39 06 61570495
Fax: +39 06 61561906
Contact the organisation

Turkey
MUSTAFA KEMAL UNIVERSITY
ATATURK CADDESI
31034 ANTAKYA HATAY
EU contribution: EUR 20 400
See on map

Activity type: Higher or Secondary Education Establishments

Administrative contact: Cemal Turan
Tel.: +90 5358189149
Fax: +90 326 6141877
Contact the organisation
SCOTTISH GOVERNMENT
St Andrews House, Regent Road
EH1 3DG EDINBURGH
United Kingdom
See on map

**Activity type:** Higher or Secondary Education Establishments

**Administrative contact:** Lucy Webster
Tel.: +44 1312448929
Fax: +44 1312448988
Contact the organisation

SYNDICAT DES SELECTIONNEURS AVICOLES ET AQUACOLES FRANCAIS
CENTRE INRA DE TOURS NOUZILLY
37380 NOUZILLY
France
See on map

**Activity type:** Higher or Secondary Education Establishments

**Administrative contact:** Pierrick Haffray
Tel.: +33666860855
Contact the organisation

CLUSTER DE LA ACUICULTURA DE GALICIA ASOCIACION
PUNTA DE COUSO AGUINO
15960 A CORUNA
Spain
See on map

**Activity type:** Higher or Secondary Education Establishments

**Administrative contact:** Santiago Cabaleiro
Tel.: +34981841600
Fax: +34981841516
Contact the organisation

FERME MARINE DU DOUHET SAS
PORT DU DOUHET
17840 LA BREE LES BAINS
France
See on map

**Activity type:** Other

**Administrative contact:** Jean-Sébastien Bruant
Tel.: +33546765842
Contact the organisation
Ardag Ltd.  
(P.O. BOX 1742)  
Eliat  
Israel  

**EU contribution:** EUR 21 350,40

**Activity type:** Private for-profit entities (excluding Higher or Secondary Education Establishments)

**Administrative contact:** Glen Pagelson  
Tel.: +972 54 979 9296

Contact the organisation

---

PLAGTON AE  
ODOS GRIVA 17  
30100 AGRINO  
Greece

**EU contribution:** EUR 21 278,40

**Activity type:** Private for-profit entities (excluding Higher or Secondary Education Establishments)

**Administrative contact:** Dimitrios Bokas  
Tel.: +30 26410 22803  
Fax: +30 26410 23894

Contact the organisation

---

GIE LABORATOIRE D’ANALYSES GENETIQUES POUR LES ESPACES ANIMALES  
DOMAINE DE VILVERT  
78350 JOUY EN JOSAS  
France

**EU contribution:** EUR 41 120

**Activity type:** Private for-profit entities (excluding Higher or Secondary Education Establishments)

**Administrative contact:** Marie-Yvonne Boscher  
Tel.: +33134652141  
Fax: +33134652151

Contact the organisation

---

BIOMOLECULAR RESEARCH GENOMICS SRL  
VIA REDIPUGLIA 21A  
35131 PADOVA  
Italy

**EU contribution:** EUR 66 770,40

**Activity type:** Other

**Administrative contact:** Barbara Simionati  
Tel.: +39 0490995752

Contact the organisation
Fios Genomics Limited
BUCHANAN STREET 166
G1 2LS GLASGOW
United Kingdom
See on map

Activity type: Other

Administrative contact: James William Buckie
Tel.: +44 131 472 4800
Fax: +44 131 662 4678
Contact the organisation

LABOGENA DNA
69, RUE DE LA MOTTE BRULON
35700 RENNES
France
See on map

Activity type: Other

Administrative contact: Lucie Genestout
Tel.: +33 1 39 67 58 85
Contact the organisation

Subjects
Scientific Research

Last updated on 2017-12-18
Retrieved on 2019-06-14

Permalink: https://cordis.europa.eu/project/rcn/105481_en.html
© European Union, 2019