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<http://www.darwin.gov.uk>

***Sustaining livelihoods and protecting biodiversity through
development of pez blanco aquaculture***

Project No: 13/011



First Annual Report

April 2005

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1. Darwin Project Information

Project Ref. Number	13/011
Project Title	Sustaining livelihoods and protecting biodiversity through development of pez blanco aquaculture.
Country(ies)	United Kingdom - Mexico.
UK Contractor	University of Stirling
Partner Organisation(s)	Universidad Michoacana de San Nicolas de Hidalgo
Darwin Grant Value	£172,850
Start/End dates	April 2004 – March 2007
Reporting period (1 Apr 2004 to 31 Mar 2005)	1 April 2004 – 31 March 2005 Annual Report number 1
Project website	http://www.aquaculture.stir.ac.uk/qisap/Darwin/
Authors, date	Prof. Lindsay G. Ross, March 2005 Dr. Antonio Campos-Mendoza. Dr. Carlos A. Martínez-Palacios

2. Project Background

- This project is based in the Mexican Altiplano in the region of the Lake Patzcuaro basin (Mesa Central of Mexico). The region is home to a unique relict flock of Atherinopsid fishes, the *Chirostoma* group, locally known as whitefish or pez blanco. The pez blanco (*Chirostoma estor estor*) is a key species and a local symbol and has been the basis of an artisanal fishery for several centuries. Unfortunately, due to over-exploitation, change of land use and degradation of water quality in the lake the fish population has declined markedly in a short period and the species must now be considered as endangered.
- Our principal objectives are the implementation of pez blanco aquaculture within the region. The project focuses on the transfer of technology for pez blanco aquaculture to community groups and SME's which has the potential to reduce over-fishing. The recently completed associated large scale-hatchery facility (from complimentary funding) also has the potential to supply juveniles for restocking. Overall, this will help to avoid the constant pressure of fishermen on the natural population of pez blanco, thus protecting biodiversity of this unique resource, and at the same time will sustain livelihoods.

3. Project Purpose and Outputs

- The purpose of this project is to contribute to the conservation of the natural populations of pez blanco (*Chirostoma estor estor*) through aquaculture, as well as to transfer the technology already available for its culture. This project will allow the establishment of small scale aquaculture in the riparian area of Lake Patzcuaro and other selected locations. The establishment of pez blanco aquaculture will contribute to the rural economy of indigenous people (P'urhepecha ethnic group), due to the high prices of this species in the regional market. The price per kilo of pez blanco can reach £15 at Easter time.
- The establishment of lake side pond systems for the culture of this species, together with the training of indigenous people in aquaculture, is one of our or major concerns. Thus, in the first year of our project we established our first lake side production system. This is a pilot site in which five thousand juveniles of pez blanco were stocked in November 2004. This pond site has also been established as a permanent demonstration area in which all our courses are imparted. It contains a classroom and four ponds. These facilities have allowed us to train other groups interested in pez blanco aquaculture.
- Two Mexican members of our project are already completing their Master degrees in Sustainable Aquaculture, at Stirling University. As part of this, they will return to Mexico in April 2005 to conduct research projects aimed at field testing of training manuals and field development of BD strategy with target agencies and groups. These two project associates will concentrate on the further development of the project as soon as they return to Mexico I August 2005.
- The project objectives have not been significantly modified over the first year.

4. Progress:

Brief History:

- Project Associates (Alejandra Ahumada & Victor Peredo) recruited, May 2004.
- PI's initialise Darwin work, building on several years of previous development. July 2004
- Project Manager (Dr A Campos Mendoza) appointed. August 2004.
- Project Associates travel to Stirling for MSc training. September 2004.
- Project Manager develops new contacts with target groups, September 2004 – March 2005.
- Finalising pond construction at Ichupio. Ponds stocked November 2004.
- Publicity events based on above. Articles in Trade Journals.
- Demonstration and training site developed at Ichupio December 2004.
- Large scale hatchery construction commenced at UMSNH, December 2004.
- Papers published, given at conferences and in press.
- First Project Consultative Group and BD network meeting, March 2005.
- Large scale hatchery completed April 2005.

Progress in Year 1:

<i>This summary is given against milestones from the original project document. In broad terms, despite some start-up delays all activities are now running, milestones have been met and in most cases outputs (see section 9) have been significantly exceeded.</i>		
Milestones from project proposal	Original target date	Progress on milestones to March 2005
<i>Management group first meeting</i>	<i>4-5/04</i>	<ul style="list-style-type: none"> • See section 9. Output 17A • Established. First meeting March 18th, 2005.
<i>Identify & appoint staff</i>	<i>5/04</i>	<ul style="list-style-type: none"> • Appointed Mexican project staff members, Mr V Peredo & Ms A Ahumada. • Appointed short-term local project manager, Dr Antonio Campos Mendoza • Appointed UK RA, Mr J Morales
<i>Train trainers in biodiversity and extension issues for project</i>	<i>5-6/04</i>	An 80 hour course was imparted to members of the Department of Agriculture (SEGARPA-Jalisco) and the Institute of Aquaculture and Fisheries of Jalisco state. This course involved the technology transfer of pez blanco aquaculture. Two delegates were involved. They will transfer this information to rural areas in Jalisco, so allowing the diversification and improvement of rural aquaculture through pez blanco.
<i>Train stakeholders in pond management and on-growing using participatory techniques</i>	<i>6-7/04</i>	A campesino group from Ichupio were trained in the construction and development of earth ponds, installation of plastic liners and preparation of ponds for the introduction of pez blanco juveniles. The training involved the preparation and fertilization of the pond, inoculation of phyto- and zooplankton and monitoring of water quality parameters. A further workshop is planned for early 2005
<i>Conduct baseline livelihoods assessments in conjunction with above</i>	<i>6-7/04</i>	<ul style="list-style-type: none"> • PRA methodology established and materials developed. • PRA's to be conducted with workshops in May/June 2005.

<i>Train 2 staff members in MSc Sustainable Development at Stirling.</i>	9/04	Mr Peredo & Ms Ahumada are studying Sustainable Aquaculture at IoA, Stirling to prepare them for management of the project from mid-2005.
<i>Develop at least 1 campesino pond site; start trials</i>	12/04	The Ichupio pond site was completed in October. The first juveniles of pez blanco were introduced in early November. This pilot pond site has been further developed as a demonstration and training base for further introductory training on pond management. A second sits at El Durazno was seeded in March 2005.
<i>Develop at least 1 SME pond site; start trials</i>	12/04	Contacts made with SME in Tzitzio and a larger producer in Ixtlan. Plans are under development, slowly but surely.
<i>Complete construction of key hatchery (from complimentary Mexican reserch council funding)</i>	3/05	<ul style="list-style-type: none"> • Work commenced in October 2004. • Hatchery is now functional. • Expected final completion date May/ 2005
<i>Train stakeholders in pond management and harvesting techniques.</i>	2-3/04	Next workshops to be arranged
<i>Publish significant results in journals</i>	4/04 to 3/05	<ul style="list-style-type: none"> • 1 Paper on effects of salinity published in Aquaculture. • 4 Papers presented at <i>Atherinid</i> meeting, Argentina, 2004. • All above to be published in BIOCELL • 2 Papers prepared for World Aquaculture Soc, Bali, 2005.
<i>Promote biodiversity issues through press and fisheries department.</i>	4/04 to 3/05	<ul style="list-style-type: none"> • Article published in Fish Farmer, May 2004 • Article published in Aquaculture News, Jan 2005 • Article Publisher in Ciencia y Desarrollo, CONACyT, México. Jan 2005. • Numerous newspaper articles. • Short article on Project shown on local TV station • Web pages fully developed. See: http://www.aquaculture.stir.ac.uk/gisap/Darwin/

Achievements this year:

- Formation of Project team
- Further development of the underlying science
- Training of Trainers.
- Developing field contacts.
- Increasing training of Stakeholders
- Training of SME's
- Prototyped field manual.
- Working on BD and aquaculture strategy.
- Established BD & Aquaculture Network.
- Raising awareness in region and in country.
- Re-development of website.

Difficulties:

- This project was originally planned to start in April 2004, but due to initial communication delays some time was lost. Nonetheless, preparatory work started in April/May and the project officially started on July 1st. Despite these delays, all milestones have been met and in fact exceeded in most cases.
- Because of the delayed start, part of the forecast budget spend was also delayed. This has now been rectified and the project is 100% on target.
- Because of the delayed start, there was some slippage in commencing work with policy makers (SEGARPA and COMPESCA). This was also due to lack of communication from the personnel in those institutions. This was partially solved during the November visit of Professor Ross when the initial contacts were made for the Project Consultative group and BD Network. The first meeting of this group took place in March 2005 and was very successful.

Timetable for year 2 Apr2005-Mar 2006:

This is based on the original proposal and most major points remain the same.

It is very important to note that we wish to move the proposed conference from the second year to the third year (see red text below). Planning for this is now well under way, see:

<http://www.aquaculture.stir.ac.uk/gisap/Darwin/Congreso.htm>

We now consider it better timing to schedule the conference for autumn 2006 rather than as originally planned.

4/05 to 3/06	Work on sustainable approach to on-growing through use of integrated systems with other native species (this is already in progress at UMSNH).
4/05 to 3/06	Develop second tranche of pond trial sites with campesinos and SME's
4/05 to 3/06	Extend technology to related candidate species.
4/05 to 9/05	Train stakeholders in pond management and on-growing using participatory techniques
9/05	3rd national Conference on Native Species for Aquaculture – move to Year 3.
10/05 to 3/06	Train stakeholders in pond management and harvesting techniques.
10/05 to 3/06	With SAGARPA & COMPESCA commence development of sustainable biodiversity plan(s) related to the activity and the species group
4/05 to 3/06	Publish significant results in journals

5. Actions taken in response to previous reviews:

- Not applicable

6. Partnerships:

- **Collaboration between Institute of Aquaculture and UMSNH:** This has been excellent throughout the year, building on long-standing professional relationships between the Principal Investigators (Ross and Martinez) as well as excellent support from Dr Campos Mendoza (Local Project Manager). We do not anticipate any difficulties in this relationship over the project period.
- **Collaboration with other similar projects:** We have developed an informal collaboration with a wide group of researchers working on the South American Pejerrey, both in South America and Japan. This closely related species has many features in common with pescado blanco and a free exchange of views and experience has brought much additional information in to the Darwin Initiative and related projects, thus enabling more rapid development in a number of areas. See our papers given at a collaborative meeting in Argentina (now in press in BIOCELL) at: <http://www.aquaculture.stir.ac.uk/gisap/Pubs/Chirostoma.htm>

7. Impact and Sustainability:

- We have made substantial efforts to promote the work this year, both in English and in Spanish. This has included a series of articles in popular trade journals and a number of newspaper articles, both local and national, in Mexico as well as more limited coverage in the UK. The historic first return of independently – reared juveniles to the lakeside also generated press coverage, including local and National TV and this promoted a lively debate in the area on the BD issues surrounding the collapse of the fishery.
- The trade journal coverage can be seen at: <http://www.aquaculture.stir.ac.uk/gisap/Pubs/Chirostoma.htm>
- Examples of the TV and press coverage can be seen at: <http://www.aquaculture.stir.ac.uk/gisap/Darwin/Chirostoma/Publicity.htm>

8. Post-Project Follow up Activities:

- Not applicable

9. Outputs, Outcomes and Dissemination

Table 1. Project Outputs: (According to Standard Output Measures)

↑ = <i>outputs greater than plan</i>				↔ = <i>outputs same as plan</i>
Code No.	Quantity Projected	Quantity Achieved	Change ?	Description
2	2	4	↑	Alejandra Ahumada Garcia (Mexican, studying at Stirling University) Victor Peredo Alvarez (Mexican, studying at Stirling University) Judith Sanchez Blanco (Mexican, Studying at UMSNH) Lazaro Cruz Aguilar (Mexican, Studying at

				UMSNH)
3	2	9	↑	<ul style="list-style-type: none"> Alejandra Ahumada Garcia (Mexican, BSc at UMSNH) Maria del Carmen Aguilar Valdez (Mexican, BSc at UMSNH) Jesus Lopez Garcia (Mexican, BSc at UMSNH) Rafael Delgado Duran (Mexican, BSc at UMSNH) Ana Rosa Hernandez Tellez (Mexican, BSc at UMSNH) Juan Antonio Tello Ballinas (Mexican, BSc at UMSNH) Zumac Tzitziqui Mendez Carranco (Mexican, BSc at UMSNH) Saul Zamora Mendez (Mexican, BSc at UMSNH) Edgar Eduardo Rodríguez Ayala (Mexican, BSc at UMSNH)
6A	10	45	↑	<ul style="list-style-type: none"> 10 campesinos from Ichupio 30 campesinos from San Jeronimo and Purechecuario 5 campesinos from Pacanda All campesinos trained in pond management and grow-out techniques.
6A	5	15	↑	<ul style="list-style-type: none"> 5 Staff of SAGARPA -Jalisco were trained in pez blanco aquaculture. 10 Staff including COMPECA were trained on aquaculture economics and pond management
6A	6	6	↔	Small business (SME) trained in aquaculture.
6B	2	13	↑	Training weeks for all 6A items.
7	1	1	↔	Field training manual. First draft of manual aimed at campesinos, based on drawings and minimal text, is now ready for field testing. See our website: http://www.aquaculture.stir.ac.uk/gisap/Darwin/manuals.htm
8	8 weeks	12 weeks	↑	<ul style="list-style-type: none"> Two visits of Prof. Lindsay Ross (Project leader UK) One visit of Mr. Ernesto Mariano Morales (Project collaborator UK) One visit of Dr. Trevor Telfer (Project collaborator UK)
11A	1	1	↔	Paper published (see table 2)
11B	2	5	↑	Five papers submitted (see table 2)

12A	1	1		GIS Database on <i>Chirostoma</i> species distribution – work commenced March 2005.
14B	2	5	↑	<p>Mexican Ichthyological Society (Villahermosa, Tabasco)</p> <ul style="list-style-type: none"> • Martínez-Palacios, C.A., and Ross, L.G. The silverside fishes of Patzcuaro and Chapala lakes. Advances on their research and culture. • Growth and reproduction of Pez blanco <i>Chirostoma estor estor</i>, in a closed recirculation system. <p>Seminars at Maringa University (Maringa, Brasil)</p> <ul style="list-style-type: none"> • Aspects of fish feeding and the use of microagregates. <p>Symposium on Pejerrey Biology (Chascomus, Argentina)</p> <ul style="list-style-type: none"> • Ross, L.G., Carlos A. Martínez-Palacios., Antonio Campos-Mendoza., y Maria Luisa Rodríguez de Sousa. 2004. La Iniciativa Darwin y el Pescado Blanco <i>Chirostoma estor estor</i> : un vinculo entre la acuicultura, la biodiversidad y el bienestar social. Invited paper. Jornadas de Biología del pejerrey. Aspectos básicos y acuícultural. IIB-INTECH, Chascomus, Argentina. • Martínez-Palacios, C.A., Ross, L.G., Racotta-Dimitrov, I, Ríos Durán, M., Campos Mendoza, A., Palacios Metchenov, E. y Toledo Cuevas, M. 2004. Los peces blancos Mexicanos de los Lagos de Pátzcuaro y Chapala y el avance en su investigación y cultivo. Invited paper. Jornadas de Biología del pejerrey. Aspectos básicos y acuícultural. IIB-INTECH, Chascomus, Argentina. • Campos-Mendoza, A., Chávez-Sosa José C., Santoyo Guzmán, V. O., Martínez-Palacios C. A. y Ross, L G 2004. Efecto del fotoperiodo en la reproducción del pez blanco del Lago de Pátzcuaro <i>Chirostoma estor estor</i>. Jornadas de Biología del pejerrey. Aspectos básicos y acuícultural. IIB-INTECH, Chascomus, Argentina. • Ríos-Durán, Ma, G., Hernández-Téllez, A.R., Martínez-Palacios, C.A. and Ross, L.G. 2004. The effect of transportation stress on tissue ascorbic acid levels of Mexican silverside (<i>Chirostoma estor estor</i> Jordan, 1979). Jornadas de Biología del pejerrey. Aspectos básicos y acuícultural. IIB-INTECH, Chascomus, Argentina.

14B /cont				<p>Invited talk: Secretary of Urbanism and Environment (SUMA, Morelia, Mexico)</p> <ul style="list-style-type: none"> Martínez-Palacios, C.A., Ross, L.G. Applied science and technology development to allow the conservation of pez blanco from Patzcuaro lake.
15A	1	1	↔	Press release in La Jornada (National news paper)
15B	2	3	↑	Press releases in La Voz de Michoacan and Cambio de Michoacán. (Local Newspapers)
15C/D	1	1	↔	One press release in the UK (Local newspaper)
17A	1	1	↔	<p>Establishment of Dissemination Network and Consultative group on conservation of biodiversity, March 2005. Members:</p> <ul style="list-style-type: none"> Professor Lindsay G Ross (Project leader, UK) Dr. Carlos A. Martínez Palacios (Project leader Mexico) Dr. Antonio Campos Mendoza (Project Manager) Cardiela Amezcua (NGO) Dr. Edmundo Díaz Pardo (University of Queretaro) Biol. Sergio Cortez (SAGARPA) Biol. Catalina Rosas Monje (COMPESCA) Mr. Leopoldo Pérez García (SME) Mr. Mauricio Dolores Ponciano (Campesino) Mr. Francisco Arregui Mendoza (Catfish aquaculture)
18A	1	1	↔	Article on national TV (TV AZTECA) about pez blanco aquaculture. Can be seen on our website. (TV AZTECA).
18C	1	1	↔	Local feature TV Maravatio.
N/A	1		↔	Large-scale hatchery site created at UMSNH, based on complementary funding. Can be seen on our website.
20	1	2	↑	<ul style="list-style-type: none"> HP Printer Overhead used as contribution towards purchase of a pick up.
23	1	2	↑	<ul style="list-style-type: none"> FONDOS MIXTOS “Transferencia tecnológica para el cultivo semi-intensivo del pez blanco de Patzcuaro”. SAGARPA “Desarrollo de las bases técnicas y científicas para el cultivo del pez blanco de Chapala (<i>Chirostoma promelas</i>) y Patzcuaro (<i>Chirostoma estor estor</i>)”.

Table 2: Publications

Type	Detail	Publishers	Available from	Cost £
Peer reviewed paper	Martinez-Palacios, C.A., Comas-Morte, J., Tello-Ballinas, J.A., Toledo-Cuevas, M. and Ross, L.G. (2004). The effect of saline environments on survival and growth of eggs and larvae of <i>Chirostoma estor estor</i> Jordan 1880 (Pisces: Atherinidae)	Aquaculture, Elsevier, The Netherlands.	Libraries, or http://www.aquaculture.stir.ac.uk/qisap/Pubs/Chirostoma.htm	Nil
Peer reviewed paper submitted for publication	Campos-Mendoza, A., Chavez-Sosa, J.C., Santoyo-Guzman, V.O., Martinez-Palacios, C.A. and Ross, L.G. (2004) The effect of photoperiod on reproduction of Pez blanco (<i>Chirostoma estor estor</i>) of lake Patzcuaro.	Biocell, Argentina	ac7@stir.ac.uk	Nil
Peer reviewed paper submitted for publication	Ross, L.G., Martinez-Palacios, C.A., Rodríguez de Sousa, M.L., y Campos-Mendoza, A., (2004) Darwin Initiative and the silverside fish <i>Chirostoma estor estor</i> : a link between aquaculture, biodiversity and livelihoods.	Biocell Argentina	lgr1@stir.ac.uk	Nil
Peer reviewed paper submitted for publication	Martínez-Palacios, C.A., Racotta, I.S., Ríos-Durán, M.G., Palacios, E., Toledo-Cuevas, M, and Ross, L.G. Advances in applied research for the culture of Mexican silversides (Atherinopsidae).	Biocell Argentina	lgr1@stir.ac.uk	Nil
Peer reviewed paper submitted for publication	Ríos-Durán, M. G., Hernández-Téllez, A.R., Martínez-Palacios, C.A. and Ross, L.G. <i>The effect of transportation stress on tissue ascorbic acid levels of mexican silverside (Chirostoma estor estor Jordan, 1979)</i>	Biocell Argentina	lgr1@stir.ac.uk	Nil

10. Project Expenditure

Table 3: Project expenditure during the reporting period (DEFRA F/Y 01 April to 31 March)

Item	Budget (please indicate which document you refer to if other than your project schedule)	Expenditure	Balance

Please note that these budget figures reflect the internal accounting mechanisms and recoding used within the University of Stirling and so some values will differ from the original Darwin/DEFRA budget proposal. The important point is that the overall project total remains exactly as planned, with an underspend on the year of £89.

11. Monitoring, Evaluation and Lessons

- Monitoring has been continuous through daily email and by brief written and verbal reports from all participants to the UK and Mexican project directors. Regular visits from the UK project director have also been extremely important and valuable.
- All outputs and outcomes have contributed qualitatively to the planned project purpose and objectives. Regular quantitative evaluation of achievements and the six monthly and annual reports against the project milestones shows that targets have been exceeded in most cases.
- A management group has been established and this provided useful input. Because of availability and location of members, we have decided that this group will meet every 6 months, rather than the three month interval originally proposed.
- It is early to look for lessons to be derived. Slow responses from some collaborators have been experienced but this was anticipated to a large extent and is built in to our future plans. The value of an in-country manager (Dr Campos Mendoza) has been shown this year and this will be maintained for the remainder of the project by adjustment of budgets from this and other projects.

12. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum)

- First, and historic, reintroduction of juveniles to Lake Patzcuaro. These animals were produced independently of the wild population using lab-reared broodstock in which the reproductive cycle

has been closed for the first time in captivity. Photographs of this major event can be seen at <http://www.aquaculture.ac.uk/gisap/Darwin/Outreach.htm>

- There has been rapid exploration of options by target groups. A pleasing number of target groups have come forward seeking involvement with the project. The publicity gained from the above event was a big factor in this, as well as the increasing reputation of the project group in the region. This has enabled us to identify a larger number of early adopters than originally anticipated at this stage, mostly involving larger community groups. The range of early contacts can be seen on our website at <http://www.aquaculture.stir.ac.uk/gisap/Darwin/Outreach.htm>
- Completion of a large scale hatchery facility. This has the capacity to produce 1 million juveniles per year and has been based upon complimentary funding obtained from Mexican sources (CONACyT-Fondos Mixtos). Grant approval was levered by the existence of Darwin Initiative support, and other, funding. See <http://www.aquaculture.stir.ac.uk/gisap/Darwin/Hatchery.htm>

■ **I agree for ECTF and the Darwin Secretariat to publish the content of this section**

Annex 1. Report of progress and achievements against Logical Framework for Financial Year: 2003/2004

Project summary	Measurable Indicators	Progress and Achievements April 2004-Mar 2005	Actions required/planned for next period
<p>Goal: To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve</p> <ul style="list-style-type: none"> • The conservation of biological diversity, • The sustainable use of its components, and • The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources 			
<p>Purpose: Threatened fish species in Mexican altiplano lakes conserved through strengthened institutional capacity, work with stakeholders and increased public awareness.</p>	<p>Establishment of pond trial sites.</p> <p>Training of campesinos.</p> <p>Training of project staff (including to MSc).</p> <p>Development of policy on sustainability of the activity.</p>	<p>Sites established, see website.</p> <p>Several successful workshops operated</p> <p>Good progress reports.</p> <p>In progress</p>	<p>No major problems have arisen. Cooperation is good and output is high.</p>
<p>Outputs:</p>			
<p>Staff trained in Sustainable Development</p>	<p>~10 Project staff trained.</p> <p>2 MSc's achieved in year 2.</p>	<p>Target exceeded.</p> <p>Graduation later this year + Thesis outputs.</p>	<p>This aspect is building well. More planned for 2005/6.</p>
<p>Campesinos trained in pond management and grow-out techniques</p>	<p>6 Workshops held for 45+ participants. See: http://www.aquaculture.stir.ac.uk/gisap/Darwin/Workshops.htm</p> <p>Functional production ponds achieved. See: http://www.aquaculture.stir.ac.uk/gisap/Darwin/Projects.htm</p>	<p>Project reports, pond outputs, performance monitoring programme.</p>	<p>Cooperation has been excellent. Further workshops and projects are planned for 2005/6</p>
<p>Hatchery facilities completed</p>	<p>The new enlarged hatchery site created at UMSNH. See: http://www.aquaculture.stir.ac.uk/gisap/Darwin/Hatchery.htm</p>	<p>Hatchery operational March 2005. Egg and juvenile production is already high. This facility will supply all our field projects.</p>	<p>Support from Fondos Mixtos has enabled this major development. The project will be completed in early 2005.</p>
<p>Small businesses involved in hatchery and supply side activities</p>	<p>Hatchery methods extended to 2+ SME business sites</p>	<p>Training given to SME staff. Assistance with project planning is under way.</p>	<p>Excellent level of interest and cooperation. More planned for 2005/6.</p>
<p>State wide policy is developed on native fish species and sustainable aquaculture.</p>	<p>Policy manual completed in years 2/3 in conjunction with stakeholders</p>	<p>Under development. See: http://www.aquaculture.stir.ac.uk/gisap/Darwin/manuals.htm</p>	<p>COMPESCA cooperation is limited, but SAGARPA is good. We will continue to work on this through our Network.</p>