

## FERNANDO COLCHERO

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Max Planck Institute for Demographic Research

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### EDUCATION

**Doctorate:** 2001-2008, Ecology, minor in statistics and modeling, Duke University.

**Undergraduate:** 1990-2001, Major Biology, minor Ecology, School of Sciences, National Autonomous University of Mexico (UNAM), MEXICO.

**High school:** 1987-1990, Lycée Franco-Mexicain, Mexico. Baccalauréat F. Mention Assez Bien.

### EMPLOYMENT

- Research Scientist, Laboratory of Evolutionary Demography, Max Planck Institute for Demographic Research, August 2008-present

- Teaching assistant, Nicholas School of the Environment, Duke University, January 2006 - May 2008

- Research assistant, Nicholas School of the Environment, Duke University, September 2002 - December 2005

- Research consultant for the conservation NGO Unidos Para la Conservacion, A.C., May 2000 - May 2001.

### PUBLICATIONS

- **Colchero, F.** and J. S. Clark (*In progress*) Bayesian inference of age-specific survival for censored and truncated data.

- **Colchero, F.**, O. L. Bass, Jr., R. Zambrano, and J. A. Gore (*Submitted*) Clustered nesting and vegetation thresholds reduce egg predation in sooty tern.

- **Colchero, F.**, J. S. Clark, O. L. Bass, Jr. and W. B. Robertson, Jr. (*Submitted*) Air and sea surface temperatures increase the risk of mortality in juvenile and adult sooty terns.

- **Colchero, F.**, R. A. Medellin, J. S. Clark, R. Lee, and G. Katul (2009) Predicting population survival under future climate change: density dependence, drought and extraction in an insular bighorn sheep. *Journal of Animal Ecology* **78**: 666-673.

- Schick, R. S., S. R. Loarie, **F. Colchero**, B. D. Best, A. Boustany, D. A. Conde, P. N. Halpin, L. N. Joppa, C. M. McLellan, and J. S. Clark (2008) Understanding movement data and movement processes. Current and emerging directions. *Ecology Letters* 11: 1338-1350

- **Colchero, F.** (2008) *Environmental impacts on the population dynamics of a tropical seabird in the context of climate change: improving inference through hierarchical modeling*. Doctoral dissertation, Nicholas School of the Environment, Duke University.

- **Colchero, F.**, L. Leon-Paniagua, and A. G. Navarro-Siguenza (2006) Hábitat del berrendo en México. In Instituto Nacional de Ecología, eds. *El Berrendo en México, Acciones de Conservación*. Mexico.

- **Colchero, F.**, G. O'Farrill, and R. A. Medellín (2005) *Didelphis marsupialis*. In G. Ceballos and G. Oliva eds. *Los Mamíferos Silvestres de México*. CONABIO-CFE. Mexico.

- Medellín, R. A. and **F. Colchero** (2001) Los borregos cimarrones de la Isla Tiburón: conservación y desarrollo sustentable. Recuadro XVII.3. Pages 510-512 In Primack, R., R. Rozzi, P. Feinsinger, R. Dirzo, y F. Massardo eds. *Fundamentos de conservación biológica Perspectivas Latinoamericanas*. Fondo de Cultura Económica. México.

- **Colchero, F.** (2001) *Análisis de la Distribución del Berrendo (Antilocapra americana) en México*. Tesis de Licenciatura, Facultad de Ciencias UNAM

- **Colchero, F.**, R. A. Medellín, R. Lee, C. Manterola, and G. Ceballos (1999) The Tiburon Island desert bighorn sheep: a conservation and sustainable development program in Mexico. Pages 77-82 In A. E. Thomas and H. L. Thomas, eds. *Proceedings of the Second North American Wild Sheep Conference*. Reno, Nevada, USA.

- Medellín, R. A., **F. Colchero**, C. Manterola, F. Ramírez, and G. Ceballos (1999) The Tiburon Island Bighorn Sheep Program: an example of binational, interinstitutional collaboration for conservation and sustainable development in a Mexican Indian and protected area. *Wild Sheep* (spring 1999): 71-72

## SCIENTIFIC REPORTS

- Amor D., **F. Colchero**, C. Manterola, D. Azuara, A. Rivera (2007) Impacto de obras de infraestructura en el uso de hábitat del jaguar en las Selvas Mayas de México y Guatemala mediante el uso de modelos Bayesianos de multinivel. Final Report Biological Mesoamerican Corridor, Mexico, World Bank.

- Poulter, B., **F. Colchero**, and P. N. Halpin (2006) Linking network and habitat models to inform conservation decisions for the management and protection of an anadromous fish (*Alosa* spp.). Final Report Environmental Defense.

- Amor D. C., **F. Colchero**, C. Manterola, and A. Rivera (2006) Evaluación y diseño del corredor Sian Ka'an–Calakmul con base en el modelaje espacial del estado de conservación del hábitat de jaguar (*Panthera onca*) y su relación con la historia de uso de suelo. BJ006. Reporte Final CONABIO.

- **Colchero, F.**, D. C. Amor, C. Manterola, and A. Rivera (2005) Establecimiento de estrategias de conservación para las Selvas Mayas de Guatemala y Belice con base en el análisis espacial de la distribución y estado de conservación del hábitat de Jaguar (*Panthera onca*). Reporte Final Conservation International.

- Amor D. C., **F. Colchero**, D. C. Amor, C. Manterola, and A. Rivera (2005) Jaguar Habitat conservation in the Mayan Forests of Mexico. Final Report National Fish and Wildlife Foundation.

- **Colchero, F.**, D. C. Amor, G. Ceballos, H. Zarza, C. Chavez, C. Manterola, and Antonio Rivera (2005) Disponibilidad y conectividad para el hábitat del jaguar en las selvas Mayas de Mexico. Reporte Final CONACYT.

- **Colchero, F.**, D. C. Amor, C. Manterola, and A. Rivera (2004) Modeling jaguar habitat in the Mayan Forests of Mexico using classification and regression tree models. Final Report Safari Club International.

#### MEETINGS AND CONFERENCES

- **Colchero, F.**, R. A. Medellín, R. Lee. *The Tiburón Island bighorn sheep: a conservation and sustainable development program in Mexico*. American Society of Mammalogists annual meeting, Seattle, WA, 1999.

- **Colchero, F.**, R. A. Medellín, R. Lee, and G. Katul. *Effect of density dependence, drought and management regime on an insular bighorn sheep population*. Ecological Society of America annual meeting, Memphis, TN, August 2006.

- **Colchero, F.**, J. S. Clark, O. P. Bass. *Hurricane and sea surface temperature on sooty tern mortality: Bayesian inference on age-specific survivorship when age is unknown*. Ecological Society of America annual meeting, San Jose, CA, August 2007.

- **Colchero, F.**, J. S. Clark, O. P. Bass, and W. B. Robertson, Jr. *Age specific survivorship of sooty terns: Bayesian inference when age is unknown*. Max Plank Institute of Demographic Research. Age-Determination Workshop, Rostock, Germany, October 2007.

#### GUEST TALKS

- **Colchero, F.** *Environmental forcing on the sooty tern's breeding phenology.* Community Ecology class taught by Dr. James Clark, October 6<sup>th</sup> 2005.

- **Colchero, F.** *Management and environmental forcing on the Tiburon Island bighorn sheep: making something out of a messed up "perfect" experiment.* Graduate Student Seminars, Nicholas School of the Environment and Earth Sciences, Duke University, November 4<sup>th</sup> 2005.

- **Colchero, F.** *How old was the deceased or... Why sooty terns don't like their fish overcooked.* Graduate Student Seminars, Nicholas School of the Environment and Earth Sciences, Duke University, October 19<sup>th</sup> 2007.

### **TEACHING EXPERIENCE**

- Fall 1998: Teaching assistant "Conservation Biology" taught by Dr. Rodrigo Medellín, School of Sciences, UNAM.

- May 2002 – June 2002, Bangalore, India: "Remote Sensing Techniques for Mapping Tiger Habitat" taught at the Center for Wildlife Studies in collaboration with Wildlife Conservation Society (WCS) and the Center for Environmental Research and Conservation (CERC), Columbia, University.

- Spring 2004: Teaching assistant for the course "Applied population ecology" taught by Dr. Stuart Pimm, Nicholas School of the Environment and Earth Sciences, Duke University.

- Spring 2006, 2007, 2008: Teaching assistant for the course "Models for environmental data" taught by Dr. James Clark, Nicholas School of the Environment and Earth Sciences, Duke University.

- Fall 2006, 2007: Teaching assistant for the course "Applied Differential Equations", taught by Dr. Gabriel Katul, Nicholas School of the Environment and Earth Sciences, Duke University.

- Age-Determination Workshop, Rostock, Germany, October 2007. Hands on Day: Hierarchical Bayes in mark-recapture framework, in R.

### **STUDENT TUTORING (IN ASSOCIATION WITH THEIR MAJOR PROFESSORS)**

- Jessica Dyson, Masters in Environmental Management. Nicholas School of the Environment and Earth Sciences.

- Heliot Zarza, Masters in Ecology, Ecology Institute, UNAM.

- Theodore Gililand. Undergraduate Student Biology, Duke University.

### **FUND RAISING**

- Scholarship for Ph. D. studies from CONACYT for 3 years \$126,000.00 USD.
- Extension of scholarship for 1 more year \$42,500.00 USD.
- Proposal to Conabio-World Bank to work in Mexico \$60,000.00 USD.
- Proposal to Conservation International to work in Guatemala and Belize \$30,000.00 USD.
- Proposal to National Fish and Wildlife Foundation to work in Mexico \$12,000.00 USD.
- Proposal to CONACYT to support UNAM team with spatial analysis in Mexico. \$14,500.00 USD.
- William Robertson research award \$1,500.00 USD.

### **REVIEWS**

- Conservation biology Spanish abstract reviewer, 1998.
- Terms of reference for World Bank spatial analysis projects, 2003.
- Paper reviewer for Journal of Population Ecology, Ecology, Experimental Gerontology and Journal of Animal Ecology.

### **ADDITIONAL SKILLS**

- **Programing:** R, Python, Mathematica.
- **Computing:** ArcGIS, Edas Imagine, Latex.
- **Languages:** Fluent in Spanish, English and French.