

CURRICULUM VITAE
Dr. Carolina V. MINTE-VERA

City and Country of residence

Maringá, PR, Brazil

CITIZENSHIP

Chilean and Brazilian

PROFESSIONAL EXPERIENCE

Multi-language written and oral communication skills;
Leadership in stock-assessment;
Development and programming software for stock assessment;
Successful proposal writing;
Budget management;
Capacity to assemble research teams to successfully complete a project;
Supervision of major honors and co-supervision of graduate students in research projects;
Supervision of technicians and contractors;
Successful collaboration with peers, fishers and managers;
Experience in co-management contexts, provision of scientific advice to management groups;
Organization and development of training modules in quantitative methods for fisheries;
Extensive training and teaching experiences at the undergraduate, postgraduate and professional level;

EDUCATION

Ph.D. Fisheries (2004)

[School of Aquatic and Fishery Sciences, University of Washington](#) (UW, Seattle, USA).

Dissertation Title: Meta-analysis of density-dependent somatic growth

Supervisory committee: Ray Hilborn (Chair, SAFS-UW), André Punt (SAFS-UW), James Ianelli (US National Oceanographic and Atmospheric Administration, NOAA), David Armstrong (SAFS-UW)

Relevant coursework taken: Methods of abundance estimation; Sampling Theory; Mathematical Statistics; Statistical Inference; Fisheries Dynamics and Management; Fisheries Stock Assessment; Advanced Analysis in Stock Assessment – Bayesian Analysis; Numerical Computing for Fisheries Assessment and Management.

M.Sc. Ecology (1997) [Universidade Estadual de Campinas](#) (UNICAMP, Campinas, SP, Brazil).

Thesis Title: The artisanal fisheries at Billings Reservoir (São Paulo).

Supervisor: Miguel Petrere Jr. (Universidade Estadual Paulista, UNESP, Rio Claro, SP, Brazil)

Examination committee: Maria Aparecida Pion Abuabara (UNESP), Antônio M. Camargo (UNESP), Alpina Begossi (UNICAMP).

Relevant coursework taken: Fish population dynamics; Statistical methods in biological sciences; Experimental design; Population ecology.

Specialist Applied Statistics (1999) [Universidade Estadual de Maringá](#) (UEM, Maringá, PR, Brazil).

Thesis Title: Sampling design for reef fish assemblages

Supervisor: Eraldo Shunk Silva (UEM)

Relevant coursework taken: Regression analysis, multivariate analysis

BA Ecology (1994) [Universidade Estadual Paulista](#) (UNESP, Rio Claro, SP, Brazil)

EMPLOYEMENT

1999 to 2009 - Assistant Professor at the Department of Biology, and member of Research Nucleus in Limnology, Ichthyology and Aquaculture (NUPELIA), Universidade Estadual de Maringá (UEM), PR, Brazil. The main duties include teaching, research and outreach, detailed below.

1997 to 1999 – Data Analyst at NUPELIA, Universidade Estadual de Maringá (UEM), PR, Brazil. Supervisor: Dr. Angelo Antônio Agostinho. Main duties: participation in research projects, mentoring of graduate students and researchers on data analysis in ecology and fisheries, supervision of students. The following researchers were assisted in the data analysis of their research: Prof. Dr. Sueli Train (community ecology, multivariate analysis); Dr. Rosemara Fugli (multivariate analysis, linear models); Prof. Dr. Sandra Stábile (exploratory data analysis, hierarchical analysis of variance); Dr. Cláudia Bonecker (linear models, aggregation); Prof. Dr. Marion Machado (community ecology, multivariate analysis); Dr. Vera Lucia Lescano de Almeida and Prof. Dr. Norma Hahn (linear models).

SELECTED PUBLICATIONS

Hazin, H.G.; **Minte-Vera**, C.V.; Hazin, F.; Travassos, P.; Carvalho, F.; Mourato, B. Standardized CPUE series of swordfish *Xiphias gladius*, caught by Brazilian tuna fisheries in the Southwestern Atlantic Ocean. SCRS/2009/119 [To be published in the Collect. Vol. Sci. Pap. ICCAT, in 2010]

Moura, R.L.; **Minte-Vera**, C.V.; Curado, I.B.; Francini-Filho, R.B.; Rodrigues, H.C.L.; Dutra, F.D.; Alves, D.C. ; Souto, F.J.B. Challenges and prospects of fisheries co-management under a Marine Extractive Reserve framework in Northeastern Brazil [accepted Coastal Management DOI: 10.1080/08920750903194165]

Seixas, C.S.; **Minte-Vera**, C.V.; Ferreira, R.G., Moura, R.L.; Curado, I.B.; Pezzuti, J. Thé, A.P.G., Francini-Filho, R.B. 2009. Co-Managing commons: Advancing Aquatic Resources Management in Brazil. p. 156-182. in: Lopes, P. and Begossi, A. Current Trends in Human Ecology. Newcastle upon Tyne: Cambridge Scholars Publishing.

Minte-Vera, C. V.; Moura, R.L. and Francini-Filho, R. 2008. Nested sampling: An improved visual census technique for studying reef fish assemblages. Marine Ecology Progress Series 367:283-293.

Hilborn, R. and **Minte-Vera**, C.V. 2008. Fisheries induced changes in growth rates in marine fisheries: are they significant? Bulletin of Marine Science 83(1):95-105.

Moura, R.L.; Dutra, G. F.; Francini-Filho, R.; **Minte-Vera**, C. V.; Curado, I. B.; Guimarães, F. J.; Oliveira, R. F. and Alves, D.C. 2007. Fisheries management in the Extractive Reserve of Corumbau, Bahia. In: Ministério do Meio Ambiente (Org.). Aquatic protected areas as fisheries management tools. Protected Areas of Brazil Series. Brasília, 4:175-187.

Petere, M.; Walter, T.; **Minte-Vera**, C. V. 2006. Income evaluation of small-scale fishers in two Brazilian urban reservoirs: Represa Billings (SP) and Lago Paranoá. Brazilian Journal of Biology, Brasil, v. 66, n. Volume 3, p. 817-828.

Minte-Vera, C.V., Branch, T. A., Stewart, I. J., and Dorn, M.W. 2005. Practical application of metaanalysis results: avoiding the double use of data. Canadian Journal of Aquatic and Fisheries Sciences 62: 925-929.

Speckman, S.G., Piatt, J.F., **Minte-Vera**, C.V. and Parrish, J.K. 2005. Parallel structure among environmental gradients and three trophic levels in a subarctic estuary. Progress in Oceanography, 66(1): 25-65.

Oliveira, E. F., **Minte-Vera**, C.V., and Goulart, E. 2005. Structure of fish assemblage along spatial gradients in a deep subtropical reservoir in Brazil-Paraguay border. *Environmental Biology of Fishes* 72: 283-304.

Hilborn, R., Branch, T.A., Ernst, B, Magnusson, A., **Minte-Vera**, C.V., Scheuerell, M.D., and Valero, J.L. 2003. State of the World's Fisheries. *Annual Review of Environment and Resources*. 28:359-399

Oliveira, E.F., Goulart, E., and **Minte-Vera**, C.V. 2003. Patterns of dominance and rarity of fish assemblage along spatial gradients in the Itaipu Reservoir, Paraná, Brazil. *Acta Scientiarum* 25:71-78.

Minte-Vera, C.V., and M. Petrere. 2000. Artisanal fisheries in urban reservoirs: a case study from Brazil (Billings Reservoir, São Paulo Metropolitan Region). *Fisheries Management and Ecology* 7: 537-549.

Agostinho, A.A. , Thomaz, S.M., **Minte-Vera**, C.V. and Winemiller, K.O. 2000. Biodiversity in the High Parana River Floodplain. In: Gopal, B., W.J. Junk and J.A. Davis. *Biodiversity in wetlands: assessment, function and conservation*, vol. 1. Backhuys Publishers, Leiden, The Netherlands, pp.89-118.

Minte-Vera, C.V. 1999. The Ramsar Convention and Wetland Conservation [In Portuguese]. *Cadernos de Biodiversidade* 2:42-52.

Minte-Vera, C.V., S.A. Camargo, S.A .F, Bubel, A.P.M. and M. Petrere. 1997. Artisanal fisheries in an urban reservoir: Billings Case (Metropolitan Region of São Paulo). *Brazilian Journal of Ecology* 1:143-147.

RESEARCH AND WORKING EXPERIENCE

2006 to current - Associate Editor for Ecology of the journal *Neotropical Ichthyology*
<http://www.ufrgs.br/ni/>

2006 to current – Invited Professor for graduate program in Ecology of Continental Aquatic Ecosystems of the Universidade Estadual de Maringá <http://www.pea.uem.br/>

1. Stock assessment experience and research projects

I have a broad stock assessment experience, working from many sides. As detailed below, I had experience assessing stocks in several countries and for several types of organization, from regional fisheries management organizations to the fishing industry, both leading the stock assessment and working as collaborator. I also have experience programming both simple biomass dynamics models to complex age-structured, multi-fleet, multi-stock Bayesian. I have worked since my Master degree studies with small scale (artisanal) fisheries, mainly providing advice for co-management.

Conservation International Brazil

2006-2009 Marine Management Areas Science Program, Core Ecological Monitoring – Abrolhos Node, Brazil. This program studies the management of multiple-use and protected marine areas, from a perspective that combines both social and biological sciences. It is an initiative of Conservation International and it is founded by the Gordon and Betty Moore Foundation. I am involved with the Core Ecological Monitoring of the Abrolhos Node in Brazil as senior consultant, and supervisor of contractors developing projects about reef fisheries (Matheus O. Freitas), soft bottom ecology and fisheries (Juliane R. Cebola), mangrove ecology and fisheries (Eduardo Marocci) in collaboration with Rodrigo Leão de Moura (CI, Brazil).

ICCAT – International Commission for the Conservation of Atlantic Tunas

2009 – Atlantic swordfish stock assessment session (Madrid, September 7 to 11, 2009). Participation as part of the Brazilian delegation (with P. Travassos). I served as rapporteur of several sections of the report and I applied the COM - catch only model – for assessing the status of the southern stock of swordfish.

2009 – Meeting of the ICCAT Working Group on Stock assessment methods (Madrid, March 11-14, 2009). Participation in the meeting as representative of Brazil.

2008 – Yellowfin and Skipjack stock assessments meeting, Inter-Sessional Trop. Spp. Group (Florianópolis, Brazil – July 21 to 29, 2008). During this meeting I had the opportunity to present some of the results of the simulation-testing of the COM -catch only model- and to propose that the COM be used for the assessment of tropical tunas. The group decided that the COM approach shall be used for skipjack tuna as part of the set of approaches used for assessing this species. I was able actively participate on the whole meeting, especially on the construction of informative priors and on the fit of the COM for the East and West Atlantic Skipjack tuna stocks. My multilanguage skills were also useful in this meeting, which was attended by scientists from many countries.

Department of Fisheries and Oceans – DFO – Canadá

2009- Participation as external reviewer in the Assessment Framework for Georges Bank Scallop, Maritimes Region Science Advisory Process, Dartmouth, Nova Scotia, Canadá, 18-20 February 2009. The objectives of the meeting were: (1) to review survey index of abundance, and (2) to review of model(s) to assess status and productivity.

Food and Agriculture Organization of the United Nations (FAO).

I am performing further simulations with more scenarios to evaluate the catch only models (COM, Vasconcellos & Cochrane, 2005)¹ to expand on the previous contract (see below). These models combine a biomass dynamics model with a harvest dynamics model, and are fit only to catches. Four parameters are estimated. The simulation showed that the models when provided with informative priors in some key parameters are able to generate acceptable fisheries indicator that successfully point towards the correct management advice. The results of the simulation-testing will be part of a peer-review paper, already in the review process by Fisheries Research.

2006 October I was part of a group (which also included William Cheung, UBC, Canada, Beth Fulton, CSIRO, Australia, and Paul Medley UK) invited by Marcelo Vasconcellos and Keven Cochrane (FAO-FIRM) to develop a draft working plan for a research aiming at testing multispecies and ecosystem indicators. The results are in the “Report of the Workshop on Multispecies and Ecosystem indicators and Biomass-Fleet Dynamics Stock Assessment”, and are summarized here. The focus of the study is to consider which ecological indicators of changes in exploited aquatic ecosystems will work in data poor locations and whether it is actually possible to detect clear ecological signals with the type of information available in these locations. The main objectives are: 1) to identify which indicators are most likely to be useful in data poor fisheries; 2) to identify the minimum required level of data collection; 3) to assess the value of restricted fisheries dependent data sets; 4) to assess the value of expert information and local knowledge and 5) to assess the value of benchmarks (reference points) for the most useful indicators. These objectives would be attained using a simulation – testing and case studies. The suitable operating model should meet some criteria and should have environmental components, multiple habitat types, and other environment drivers such as temperature; biological components and human components. Candidate models are Ecopath with Ecosim, Stella, bioeconomic Beam models, InVitro and Atlantis-like models. The proposal for further work has six components: 1) Identification of the operating models for indicator testing; 2) Scenarios to be run should include: light, moderate and heavy fishing intensities, eutrophication and other forms of large scale system

change, gear specific questions, habitat degradation, market based scenarios, pulses in recruitment or other noisy ecological events. These scenarios should be run independently and in combination so that synergistic and differential impacts can be discerned; 3) Generate time series for use by sampling model; 4) Specification of the Sampling Model; 5) Model extension and development; 6) Field testing of the indicators. Potential case-study locations should have a good coverage of habitat types, fishery and social pressures, particularly in a tropical (and potentially data-poor) context.

2005. I developed a Bayesian simulation-testing procedure to test the COM – catch-only-model (Vasconcellos & Cochrane, 2005). The results of the simulations were part of an internal report and motivated a manuscript for publication, which I lead.

The New Zealand Seafood Industry Council (SEAFIC)²

2005. From February to March 2005, I worked with the SEAFIC Science Team (Kevin Stokes, Paul Starr) and with researchers of the University of Washington (Ray Hilborn, Allan Hicks, Eric Warner) on stock assessments and fisheries data analysis. The SEAFIC is the organization that represents the fishing industry in New Zealand, and its members are the fishing quota owners and permit holders. The Science Team used to produce their own stock assessments contesting those produced by the NZ government. Nowadays the SEAFIC and the government scientists work in collaboration. I led the stock assessment of the Mid East Coast orange roughy stock *Hoplostethus atlanticus*. I was in charge of all stages of the assessment, from the production of indices of relative abundance using generalized linear models to the fit age-structured statistical models and the production of a Bayesian risk analysis. I presented the results in weekly meetings of the Deep Water Working Group, chaired by the New Zealand Ministry of Fisheries, who published a document with the final management advice.

University of Washington. School of Aquatic and Fisheries Sciences

2000 – 2004. I developed my Ph.D. research project entitled “Meta-analysis of density-dependent somatic growth”. For this project: 1) I critically reviewed the use of meta-analysis in fisheries and ecology, from the classic meta-analytic approach, to the use of random-effect and hierarchical models, and I proposed improvements to better use these methods; 2) I developed a new model for density-dependent somatic growth, which unlike current models, includes density-dependence in growth increments; for this model I re-parameterized the Von Bertalanffy growth function; 3) I developed a Bayesian hierarchical model for meta-analysis of density-dependent somatic growth and implemented this model in ADMB (Automatic Differentiation Model Builder); 4) I assembled a database with size-at-age, biomass and fishing mortality time series for more than 100 exploited fish stocks and 5) applied the Bayesian hierarchical model to search for evidence of density-dependent somatic growth in haddock. The findings should be of considerable impact due to the current concerns of the changing in size-at-age of fish and its consequences for stock assessment and management. The model I developed for density-dependent growth could be included as a component in integrated models for stock assessment. Although some of these results are still unpublished, they already had impact on the research that it has been pursued at the SAFS. Upon the completion of my Ph.D., several colleagues had applied the hierarchical modeling approach in their research 3.

National Marine Fisheries Service – NMFS, NOAA, USA

2003 – Northwest Fisheries Science Center (NFSC) I programmed in ADMB (Automatic Differentiation Model Builder) an age-structured length-based stock assessment model that was used for the assessment of cabezon *Scorpaenichthys marmoratus*, under supervision of André Punt. This assessment was reviewed by a STAR (Stock Assessment Review) panel established under the direction of the Pacific Fishery Management Council. It was accepted and formed the basis for management advice. The comparison of the performance of the cabezon model and the

Stock Synthesis model during this project was part of the basis for the Stock Synthesis 2 package, which is an ADMB version of Stock Synthesis by Dr. Richard Methot4.

2001 - Alaska Fisheries Science Center (AFSC). I worked on the Greenland turbot stock assessment under supervision of James Ianelli from July to September 2001. Specifically, I tested the sensitivity of the assessment models to the inclusion of different combinations of data series using an experimental design approach.

Co-management research projects

My current research on co-management emphasizes the collaboration among peer institutions, with other types of institutions and with fishers. I also focus on integrating outreach, research and learning through participatory research. I have experience in transdisciplinary research. My idea is that co-management will be fostered when there is an improved dialog between researchers, the community and the governmental agencies. The dialogue can be improved through the engagement of the community in the research activities. The community was included in several ways in my projects: as partners in fisheries monitoring, as co-workers in research projects and as actual leaders of small projects. The young of the community were engaged in these projects, their personal experience was influential to the rest of the community (family, schoolmates, and friends). For that I assembled a team of collaborators (fellow researchers, governmental employees, community leaders) that volunteered their work as well as a set of partner institutions that were able to engage in a transdisciplinary, transinstitutional project. I was able to successfully get funding from a federal agency on the order of R\$100,000.00 Brazilian reais (~US\$ 50,000.00) to implement these projects. I was also able to promote a broader comparison among five case studies in comanagement in Brazil proposed by Cristiana Seixas. I was able to play a role of mediator, which resulted in a chapter which was already published (Seixas, et al 2009, see publication) that includes advice on how policy should be shaped in order to foster co-management.

Support for the fisheries co-management at the Abrolhos Bank. This project is lead by me and aims at summarizing the research findings of former projects in a way that can be used in management.

“Open the Eyes for Science” (“Abra os Olhos para a Ciência”). This project is coordinated by me in collaboration with Rodrigo Leão de Moura (Conservation International, CI, Brazil) and it is funded by the Brazilian National Council of Scientific and Technological Development (Conselho Nacional de Desenvolvimento Científico e Tecnológico, CNPq). The main focus is on field educational and outreach activities in the region around Abrolhos Marine National Park. The project is a result of a partnership between the Maringá State University (UEM), Conservation International (CI, Brazil), the Humpback Whale Institute, and the Abrolhos Marine National Park. It has four specific objectives: (1) Establishment of a "Science Outreach Nucleus" at the Abrolhos Marine National Park Visitor 's Center; (2) Promotion of capacity building activities for teachers and students from the Abrolhos' region schools, focused on social and natural sciences; (3) See for example Punt, A.E.; Hodday, D.K. Flint, R. Bayesian hierarchical modelling of maturity-at-length for rock lobsters, *Jasus edwardsii*, off Victoria, Australia. Marine and Freshwater Research, 2006, 57, 503–511. Promotion of the engagement of local students into scientific research projects; (4) Production of communication materials such as booklets and folders. Among the field educational activities this project is supporting the "Teachers at the Park Program", which brings both teachers and their students to the Abrolhos reefs.

Strengthen the Participatory Management of the Use of Fisheries Resources at the Marine Extractive Reserve of Corumbau MERC. This is a multi-institutional transdisciplinary project funded by the Brazilian National Fund for the Environment (FNMA) with the main objective of build strength and capacity within the fishing communities in order to revise and implement the management plan of the reserve in an inclusive and participative way. Five goals were proposed: (1) Support and strengthen community organizations in order to promote community participation on MERC management and decision processes; (2) Develop and implement sustainable economic

alternatives for the MERC communities; (3) Develop and implement, in a participative way, a Communication, Information and Education Plan; (4) Assess and implement socio-ecological practices for the MERC Participatory and Adaptive Management Plan; (5) Assemble, expand and make available MERC databases which incorporates fisheries and biodiversity monitoring data.

Monitoring of fisheries landings and testing of by-catch reduction devices at the Marine Extractivist Reserve of Corumbau (MERC). This project was lead by me and encompassed two components: a monitoring and an experimental one. I was able to assemble a team of biologists, ecologists, students, fishers and young from the fishing communities to both design and execute the experiments. The fisheries monitoring was originally performed only with port interviews and was later expanded to a participatory monitoring, where each fisher recorded its own landings. This was particularly difficult because of the high degree of illiteracy among fishers. About 50% of MERC fishers participated in the project. There were strong components of devolution and training. Periodically we presented results in community meeting and we provided a statement of fish landings for each of the contributing fishers; we also organized courses for young and fishers on fisheries monitoring and biology. The funding for this project was provided by FNMA and SEAP (Secretaria Especial de Pesca e Aquicultura, the Brazilian Ministry of Fisheries), I was also able to provide funding for three years for undergraduate students from the CNPq. The lessons learnt from the participatory fisheries monitoring study were theme of a dissertation that received a national award (see HONORS). Currently we are preparing the manuscripts for publication.

Ecology projects

Long-term Ecological Research – The High Paraná River Floodplain: Structure and Environmental Processes. Networks of scientists engaged in long-term, site-based ecological and socioeconomic research. Our mission is to improve understanding of global ecosystems and inform solutions to current and future environmental problems. The High Paraná River Floodplain is coordinated by Dr. Angelo A. Agostinho. I am involved as thesis co-supervisor and associated researcher. Within this project, I was able to develop a new methodology to assess the population of migratory fish. The model includes the influence of the flood pulse, which is the main forcing function in a floodplain, to recruitment and it is fit to several data sources using Bayesian methods (SIR – sampling importance resampling). This research was presented at III Workshop - Site 6 – The Paraná river floodplain: structure and environmental processes (Minte-Vera, 2008).

Past Projects

Fish Biodiversity of reef environments in Brazil. 1998-2001. I was part of the team of the project, which was funded by FAPESP and CNPq. My contribution was on the development of the sampling design, especially the sampling unit, which is a type of visual census methods. The method (Minte-Vera et al 2008) has been used in several reef fish studies.

Inventory of the Ichthyofauna of the Emas National Park, GO. 1999. I lead this research project from Nupélia – Universidade Estadual de Maringá. I was able to successful assemble a team of fish systematic, fish ecologist, field worker, and fisher and with limited budgeted we were able to accomplish the inventory. The results were published in a peer review journal.

NUPELIA Projects. 1997-1999. I was involved in several projects from NUPELIA mainly on freshwater fish ecology and fisheries, lead by Dr. Angelo A. Agostinho, for which I was the data analyst. These projects are funded by hydropower companies and focus on the ecology of reservoir fish and fisheries. Some of those collaborations were published or presented in meetings. The titles of the projects are:

Ichthyofaunistical studies of Jordão river Basin. UEM # 1909/95, Funding Agency: COPEL
Environmental studies at the influence area of Salto de Caxias Reservoir. UEM # 1902/95,
Funding Agency: COPEL

Fisheries statistics and fisheries biology of the commercial catches of Itaipu Reservoir.
UEM#1324/96. Funding agency: Itaipu

Spatio-temporal variation on the ichthyofauna and its relations to the limnology of Itaipu Reservoir. UEM #1479/95. Funding agency: Itaipu

Ichthyological studies on the area of influence of Corumbá reservoir. UEM #601/96. Funding agency: FURNAS

Contractor for the CPAP, Centro de Pesquisa Agropecuária do Pantanal; EMBRAPA, Empresa Brasileira de Pesquisa Agropecuária. I analyzed data from experiments on the effect of fire in Pantanal. From 07 November 1998 to a 14 November de 1998. Contract N ° 1214/98.

Artisanal fisheries of Billings reservoir. 1995-1997. This project was part of my Master research, and it was performed under supervision of Prof. Dr. Miguel Petrere Jr, IB/UNESP, Rio Claro, SP. I was funded by CNPq (#133466/95-7) from 01/03/95 to 30/08/97. I was also able to establish a successful collaboration with fishers. One of the fishers was contracted for the project and performed landing interviews.

Socioeconomic surveys of artisanal fishers of Billings reservoir.1996-1997. This project was lead by me, and performed in collaboration with three other researchers. The main aim was to understand the socioeconomic characteristics of fishing communities. The projects were supported by a grant from FNMA (#046/95).

STOCK ASSESSMENTS DOCUMENTS

2009 Report of the 2009 Atlantic Swordfish Stock Assessment Session (Madrid, September 7 to 11, 2009). [In prep.]

2009 Report of the Working group on stock assessment methods. Madrid, March 11-14. <http://www.iccat.int/Documents/Meetings/Docs/2009_METHODS_REP_ENG.pdf>

2008 Report of the Yellowfin and Skipjack stock assessments session. ICCAT. Florianópolis, July 21-29. <http://www.iccat.int/Documents/Meetings/Docs/2008_TROP_REP_SEPT%2017.pdf>

2005 Presentations on Mid East Coast - MEC - orange roughy stock assessment for the Deep Water Working Group (working for the New Zealand Seafood Industry Council):

Minte-Vera, C.V. MEC orange roughy stock assessment. Deep Water Working Group Document 05_26 (presented February 17 2005)

Minte-Vera, C.V. Preliminary runs of MEC orange roughy stock assessment Deep Water Working Group Document 05_40 (presented March 03 2005)

Minte-Vera, C.V. MEC orange roughy stock assessment. Deep Water Working Group Document 05_40 (presented March 09 2005)

Minte-Vera, C.V. Time-varying commercial selectivity for MEC orange roughy stock assessment. Deep Water Working Group Document 05_50 (presented March 16 2005)

Minte-Vera, C.V. Projections for the MEC orange roughy stock Deep Water Working Group Document 05_55 (presented March 16 2005)

2004 Cope, J.M., Piner, K., **Minte-Vera**,C.V. & Punt, A.E. Status and Future Prospects for the Cabezon (*Scorpaenichthys marmoratus*) as Assessed in 2003. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, North West Fisheries Science Center. 147p. <www.pcouncil.org/bb/2004/0304/exe2at1cab.pdf>

2002. Ianelli, J.N., **Minte-Vera**, C.V., Wilderbuer, T.K. & Sample, T.M. Assessment of Greenland turbot stock in the Eastern Bering Sea and Aleutian Islands. U.S. Department of Commerce,

National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Alaska Fisheries Science Center. 28p.

OTHER RELEVANT REPORTS

Moura, R.L., Dutra, G., **Minte-Vera**, C.V., Curado, I.B., Francini-Filho, R.B. 2008. Marine Management Areas Science Abrolhos Node, Brazil. Progress Report n°3 September 2008. Conservation International Brazil.

Moura, R.L., Dutra, G.F., Kaufman, L., Musinsky, J., Francini-Filho, R.B., Klein, D., Freitas, M.O., Kikuchi, R.K.P., **Minte-Vera**, C.V., Cebola, J.R., Meirelles, P., Reis, R.D., Guimarães, F.J., Bastos, A., Alves, D.C., Fischman, D. Marine Management Areas Science Abrolhos Node, Brazil. Progress Report n°2 June 2007. Conservation International Brazil

Cheung, W.; Fulton, B.; Medley, P.; **Minte-Vera**, C.V. 7 Workshop Report on Multispecies and Ecosystem indicators and Biomass-Fleet Dynamics Stock Assessment. FAO, Rome, 23-26 October 2006.

Minte-Vera, C.V. Simulation testing of two effort-biomass dynamics models. Internal Report for FAO, Rome, 2005.

Moura, R.L., Kaufman, L., Francini-Filho, R.B., Freitas, M.O., Cruz, I., Kikuchi, R.K.P. **Minte-Vera**, C.V., Dutra, G.F., Motta, F.S. Marine Management Areas Science, Core Ecological Monitoring – Abrolhos Node, Brazil. Progress Report n°1. August, 2006. Conservation International Brazil.

Petere, M., Walter, T., **Minte-Vera**, C.V. 2001. Assessment of the revenues from fisheries in two urban Brazilian reservoirs: Billings Reservoir (SP) and Paranoá Lake [In Portuguese]. CNPq, Brazil.

Minte-Vera, C.V., S.A. Camargo, A.P. Bubel. 1997. Socio-economic profile of the artisanal fishers of Billings reservoir [In Portuguese] 80p. Fundo Nacional do Meio Ambiente, Process # 046/95.

SELECTED COMMUNICATIONS AT SCIENTIFIC MEETINGS

Freitas, M.O.; Moura, R.L.; **Minte-Vera**, C.V.; Francini-Filho, R.B. 2008. Spawning seasons of snappers (Lutjanidae) and groupers (Serranidae) in the Abrolhos Bank, Eastern Brazil. 22nd Meeting Society for Conservation Biology. Chattanooga, Tennessee, USA, 13-17 July, 2008.

Minte-Vera, C.V. 2008. An integrated model for the population dynamics of the curimba *Prochilodus lineatus*. III Workshop - Site 6 – The Paraná river floodplain: structure and environmental processes [A Planície Alagáveis do Rio Paraná: Estruturas e Processos Ambientais], NUPELIA, UEM, Maringá, PR, Brazil, June, 2008

Moura, R.L.; **Minte-Vera**, C. V.; Curado, I. B.; Francini-Filho, R.; Rodrigues, H.C.L.; Oliveira, R.F.; Dutra, G. F.; Alves, D.C & Souto, F.J.B. 2007. Challenges and prospects of fisheries comanagement under a Marine Extractive Reserve framework in Northeastern Brazil (Corumbau, Bahia, Brazil). XV International Conference of the Society of Human Ecology. Rio de Janeiro, RJ, Brazil. October, 2007.

Minte-Vera, C.V. & Hilborn, R. 2005. Bayesian hierarchical meta-analysis of density-dependent somatic growth in haddock. 135th American Fisheries Society Annual Meeting & Conference, Symposium on Applications of Bayesian Statistical Methods to Fisheries. Anchorage, Alaska.

Minte-Vera, C.V. 2004. Using meta-analysis to synthesize knowledge, an example from density-dependent body growth. Fourth World Fisheries Congress. Vancouver, BC. May 3-6 2004.

Minte-Vera, C.V. 2004. Risk assessment as a tool for supporting multi-objective decision-making in large rivers. Fourth World Fisheries Congress. Vancouver, BC. May 3-6 2004.

Minte-Vera, C.V., Branch, T. A., Stewart, I. J. & Dorn, M. W. 2004. Practical application of metaanalysis results - avoiding the double use of data. 13th Western Groundfish Conference (Victoria, BC, Canada).

TEACHING AND TRAINING EXPERIENCE

Organization and development of training modules for fishing communities

2008 - Socio-ecology of Abrolhos Bank. This was a training module for young from the Abrolhos Bank communities. The course was coordinated by me in collaboration with Dr. Rodrigo Leão de Moura, and executed by Priscila Cibien Baratella. The course was composed of lectures and six field expeditions. Three volunteers (Masters and Ph.D.) were involved. A total of 102 hours of work were performed.

2007 - Socio-ecology of Abrolhos Bank. This was a training module for teachers from the Abrolhos Bank communities. The course was coordinated by me in collaboration with Dr. Rodrigo Leão de Moura, and executed by Edileuza Hortêncio Aguiar. The course was composed of lectures and a field expeditions. More than twenty volunteers in teaching and

2006 – Fisheries monitoring. Two training modules were organized and taught by me to fisheries and young from the fishing communities of the Marine Extractivist Reserve of Corumbau, Bahia. The modules included lectures and hands-on field training.

Stock assessment, quantitative methods for ecology, statistics

2008 – Advanced topics in Quantitative Ecology Graduate level course for the PhD students in Ecology of Continental Aquatic Ecosystems of the University of Maringá (UEM, PR, Brazil). The course is full time (75h, ~10 students).

2008 – Introduction to Quantitative Ecology Graduate level course for the Graduate Program in Ecology of Continental Aquatic Ecosystems of the University of Maringá (UEM, PR, Brazil). The course is full time (75h, ~25 students).

2008 – Quantitative Methods in Biology Undergraduate level course for Biology students at the Universidade Estadual de Maringá (UEM, PR, Brazil) (68h, ~25 students).

2007 – Biostatistics applied to environmental studies. Graduate level course for the Graduate Program in Environmental Management of the Faculdade Intermunicipal do Noroeste do Paraná (FACINOR). The course was full time from October 19 to 20 2007 (12h, ~20 students).

2006 - Advanced method in population dynamics and management of natural resources. Graduate level course taught within IOB-5746 Sustainable Fisheries Systems at the Oceanographic Institute of the University of São Paulo (USP, SP, Brazil) by invitation of Prof. Dr. Maria de los Angeles Gasalla. The course was full time from September 25 to October 05 2006 (80h, ~15 students).

Statistics using the free software R

2006 - Statistical modeling using the free software R. Graduate level course for the Graduate Program in Ecology of Continental Aquatic Ecosystem of the University of Maringá (UEM, PR, Brazil). The course was full time May 2006 (75h).

2005 - Statistics using the free software R. Professional Training focus on basic statistic and R at the Universidade Comunitária Regional de Chapecó (UCRC, SC, Brazil) (8h).

Biology and Ecology

2008 – Vertebrates - Undergraduate level lectures for Animal Science students at the Universidade Estadual de Maringá (UEM, PR, Brazil) (20h, ~120 students/year).

2004 to 2009 - Zoology. Undergraduate level course for Agronomy students at the Universidade Estadual de Maringá (UEM, PR, Brazil) (64h, ~100 students/year).

2005 to 2009 - Economic Biology Undergraduate level course for Biology students at the Universidade Estadual de Maringá (UEM, PR, Brazil) (32h, ~30 students/year).

Other courses

Taught prior to 2000: Methods of Abundance Estimation, An introduction to research and experimental design, Research methods and biostatistics, Biostatistics applied to the ecology of aquatic organisms, Sampling design and statistical methods applied to aquaculture, Multivariate Analysis, Biodiversity, Zoology, Community ecology, Ecological Theory

STUDENTS and CONTRACTORS SUPERVISION

2005 to 2009 – Diego Corrêa Alves - Undergraduate student from the Universidade Estadual de Maringá (UEM). Supervision of internship and three Scientific Initiation Projects: July 2005 to June 2006 – “Estimation of the total fisheries catch of the Marine Extractive Reserve of Corumbau”; July 2006 to June 2007 – “Consolidation and transference of the fisheries monitoring of the Marine Extractive Reserve of Corumbau to its associations”, July 2007 to June 2008 - “Basis for the participatory assessment of the fisheries resources of the Marine Extractive Reserve of Corumbau, Bahia”, July 2008 to December 2009 - “Support for the fisheries co-management at the Abrolhos Bank”. The three latest projects with funding from the Brazilian National Council of Scientific and Technological Development (CNPq). Diego was also awarded a national prize for the research developed under my supervision.

2006 to 2009 - Marília Previero – Undergraduate student from the Universidade Estadual de Maringá (UEM). I supervised her on an internship, then a two Scientific Initiation Project entitled: “Age and growth of *Lutjanus jocu* (Block & Schneider, 1801) (Perciformes, Lutjanidae) from the Abrolhos Bank region” and “Ethnoichthyology of Cumuruxatiba fishers, Marine Extractive Reserve of Corumbau, Bahia”.

2008 – Priscila Cibien Baratella – Educator. I supervised her on the execution of the project “Open Eyes for Science”, she was payed through a scholarship, from a grant awarded to me by CNPq.

2007 to 2008 – Edileuza Aguiar Hortêncio – Educator. I supervised her on the execution of the project “Open Eyes for Science”, she was payed through a scholarship, from a grant awarded to me by CNPq.

2007 to 2008 – Luis Alberto Espínola – Biologist, CAPES (Brazilian Federal Agency for Post-Graduate Education) grant holder. Co-supervision of his Doctoral studies in course at Universidade Estadual de Maringá (UEM)– Dissertation Title: “Introduction of tucunaré *Cichla kelberi* Kullander & Ferreira 2006 in reservoirs of the Paraná Basin, Brazil”

2006 to 2008 – Juliane Regina Cebola – Biologist, Conservation International contractor. I supervised her on the execution of the project “Shrimp fishers and fisheries in inter-reefal areas under different management regimes at the Abrolhos Bank: diagnostic, production and ecological

characterization". This project is part of the Marine Management Areas Science Program, Core Ecological Monitoring – Abrolhos Node, Brazil.

2006 to 2008 – Matheus Oliveira Freitas - Biologist, Conservation International contractor. I supervised him on the execution of the project "Line reef fisheries at the Abrolhos Bank". This project is part of the Marine Management Areas Science Program, Core Ecological Monitoring – Abrolhos Node, Brazil.

2005 to 2007 - Rodrigo Silva da Costa – Biologist, CAPES (Brazilian Federal Agency for Post-Graduate Education) grant holder. Co-supervision of his Ph.D. obtained from the Universidade Estadual de Maringá (UEM)– Dissertation Title: "Fisheries ecology of High Paraná River".

2005 to 2006 - Maria Carolina S. G. Canassa – Undergraduate student, major advisor of her undergraduated thesis "Estimation of age and growth parameters of mandi-beiçudo *Iheringichthys labrosus* (Kroyer, 1874) (Osteichthyes, Siluriformes) from the High Paraná River floodplain, Porto Rico region, Brazil", a requirement to obtain her Oceanography degree from the Universidade Federal do Paraná.

HONORS

2008 – My student Diego Correa Alves was awarded the Young Scientist Award from the National Council for Scientific and Technological Development (CNPq) for an essay prepared under my supervision entitled "Participatory fisheries monitoring as tool for social coesion", which was based on three years of research at the Marine Extraterritorial Reserve of Corumbau.

2004 – Awarded the Marsha Landolt and Robert Busch Endowed Fund at the School of Aquatic and Fishery Sciences, University of Washington, Seattle, USA.

SOFTWARE DEVELOPMENT

2005. Simulation-testing module for catch only models. I developed a testing procedure using R in order to run a set of simulation scenarios.

2004. A Bayesian hierarchical model for meta-analysis of density-dependent growth. I developed this model as part of my Ph.D. research and I programmed it in ADMB. The model is able to fit time series of size-at-age to a growth model that is linked to the density of the stock. The data for several stocks are fitted simultaneously. The parameters for each stock are linked through a hyper-distribution. The software includes also the option of fitting individual models for each stock and of fitting year-effects on growth.

2003. An integrated model for the population dynamics of floodplain migratory fish. This model was applied for the assessment of curimba *Prochilodus lineatus* at the Paraná river floodplain (Minte-Vera, 2008). The model was programmed in Visual Basic for Applications and implemented a numerical integration method (SIR) in order to perform Bayesian estimation.

2003. A length-based age-structured model, with two fleet and two stocks options. This is an integrated model that can be fit to several data sources simultaneously using likelihood or Bayesian methods. I developed this model in collaboration with André Punt and I implemented it in ADMB. This model and software was used in the 2003 assessment of cabezon. The equations and the code is available at Appendices B and G of Cope, Piner, Minte-Vera & Punt (2004)8.

LANGUAGES

I am able to speak, read and write well in English, Portuguese, Spanish and French. I was born in Chile from Chilean parents and raised in Brazil since 8 years old. When I was 17, I spent a year in

France as an exchange student living with a French family and studying at the local High School. I spent almost five years in the USA during my Ph.D.

COMPUTER SKILLS

Programming, non-linear modeling and Bayesian analysis: AD-Model Builder, R, Visual Basic for Applications, BUGS.

Statistics: R, Statistica, Systat, GLIM.

Multivariate Analysis: R, PC-Ord, NTSYS-pc

Stock Assessment Softwares: Coleraine, MULTIFAN-CL, Stock Synthesis 3.0, ASPIC