

参考文献

- Aguilar-Manjarrez, J.** 1992. Construction of a GIS for Tabasco State Mexico. Establishment of technical and social decision models for aquaculture development. Institute of Aquaculture. University of Stirling, UK. 125 pp. (M.Sc.Thesis).
- Aguilar-Manjarrez, J.** 1996. Development and evaluation of GIS-based models for planning and management of coastal aquaculture: a case study in Sinaloa, México. Institute of Aquaculture, University of Stirling, Scotland, UK. 373 pp. (Ph.D. Thesis).
- Aguilar-Manjarrez, J. & Nath, S.S.** 1998. *A strategic reassessment of fish farming potential in Africa*. CIFA Technical Paper. No. 32. FAO, Rome. 170 pp. (also available at <http://www.fao.org/docrep/W8522e/W8522E00.htm>).
- AquaGIS.** 2006. Newfoundland and Labrador Aquaculture Geographic Information System. Department of Fisheries and Aquaculture, Newfoundland and Labrador. (available at www.aquagis.com).
- Arnold, W.S., Norris, H.A. & Berrigan, M.E.** 1996. Lease site considerations for hard clam aquaculture in Florida. *Journal of Shellfish Research* 15:478-479.
- Arnold, W.S. & Norris, H.A.** 1998. Integrated resource management using GIS: Shellfish aquaculture in Florida. *Journal of Shellfish Research* 17: 318.
- Arnold, W.S., Kaiser, J.B. & Holt, G.J.** 2002. Spawning of Cobia (*Rachycentron canadum*) in captivity. *Journal of the World Aquaculture Society*, 33(2): 205-208.
- Arnold, W.S., White, M.W., Norris, H.A. & Berrigan, M.E.** 2000. Hard clam (*Mercenaria spp.*) aquaculture in Florida, USA: geographic information system applications to lease site selection. *Aquacultural Engineering*. 23(1-3):203-231.
- Auckland Regional Council.** 2002. Mapping constraints to future marine farming in the Auckland and Waikato Regions-Stage One. 96 pp.
- Auckland Regional Council** (no year). Mapping Potential Aquaculture Management Areas in the Auckland Region – Stage 2. (available at http://www.arc.govt.nz/arc/library/b86166_2.pdf).
- Bacher, C., Grant, J., Hawkins, A.S.J., Fang, J., Zhu, M. & Besnard, M.** 2003. Modelling the effect of food depletion on scallop growth in Sungo Bay (China). *Aquatic Living Resources*, 16(1): 10-24.
- Basurco, B. & Sarologia, M.** 2002. Seafarming today and tomorrow. European Aquaculture Society. Special Publication No. 32. 562 pp.
- Belton, V. & Stewart, T.J.** 2002. Multi Criteria Decision Analysis and Integrative Approaches, Kluwer Academic Publishers, New York.
- Beveridge, M.** 2004. *Cage Aquaculture*. Third Edition. Blackwell Publishing, London. 376 pp.
- Booth, A.J.** 2004. Spatial statistics and aquatic Geographic Information Systems. In Nishida, T., Kailola, P. and Hollingworth, C. eds. GIS/Spatial analyses in fishery and aquatic sciences (Vol 2.) Proceedings of the Second International Symposium on GIS/Spatial analyses in fishery and aquatic sciences. pp. 3-44. Fishery-Aquatic GIS Research Group. Kawagoe, Saitama, Japan. 733 pp.

- Booth, A.J. & Wood, B.** 2004. Geographic Information Systems application in offshore marine fisheries. In Fisher, W. L. and Rahel, F.J. eds. *Geographic information systems in fisheries*. pp. 209-236. American Fisheries Society, Bethesda, Maryland, USA. 275 pp.
- Breman, J.** ed. 2002. *Marine geography. GIS for the oceans and seas*. ESRI Press. Redlands, California, USA. 204 pp.
- Bremen, J., Wright, D. & Halpin, P.N.** 2002. The inception of the ArcGIS marine data model. In Breman, J. ed. *Marine geography. GIS for the oceans and seas*. Pp 3-10. ESRI Press. Redlands, California, USA. 204 pp.
- Bridger, C.J. & Costa-Pierce, B.A.** eds. 2003. *Open Ocean Aquaculture: From Research to Commercial Reality*. The World Aquaculture Society, Baton Rouge, Louisiana, USA. 351 pp.
- Bridger, C.J., Costa-Pierce, B.A., Goudey, C.A., Stickney, R.R. & Allen, J.D.** 2003. Offshore aquaculture development in the Gulf of Mexico: Site selection, candidate species, and logistic alleviation. In Pages 273–283 C.J. Bridger and Costa-Pierce, B.A., eds. *Open Ocean Aquaculture: From Research to Commercial Reality*. The World Aquaculture Society, Baton Rouge, LA.
- Buitrago, J., Rada, M., Hernández, H. & Buitrago, E.** 2005. A Single-Use Site Selection Technique, Using GIS, for Aquaculture Planning: Choosing Locations for Mangrove Oyster Raft Culture in Margarita Island, Venezuela. *Environmental Management* 35(5): 544-556.
- Burrough, P.A.** 1986. *Principles of Geographic Information Systems*, 1st ed. Oxford University Press, New York 336 pp.
- Butler, M.J.A., LeBlanc, C., Belbin, J.A. & MacNeill, J.L.** 1987. *Marine resource mapping : an introductory manual*. FAO Fisheries Technical Paper No. 274. Rome, FAO. 256 pp.
- Butler, M.J.A., Mouchot, M.-C., Barale, V. & LeBlanc, C.** 1988. *The application of remote sensing technology to marine fisheries : an introductory manual*. FAO Fisheries Technical Paper No. 295. Rome, FAO.
- Carswell, B., Cheesman, S. & Anderson, J.** 2006. The use of spatial analysis for environmental assessment of shellfish aquaculture in Baynes Sound, Vancouver Island, British Columbia, Canada. *Aquaculture*, 253(1-4): 408-414.
- Center for Coastal Resources Management.** 1999. Shallow water resource use conflicts: Clam aquaculture and submerged aquatic vegetation. Virginia Institute of Marine Science, Gloucester Point, Virginia. 30 pp.
- Chang, B., Page, F.H. & Hill, W.H.** 2005. Preliminary analysis of coastal marine resources use and the development of open ocean aquaculture in the Bay of Fundy. Canadian Technical Report of Fisheries and Aquatic Sciences 2585. 36 pp.
- Cicin-Sain, B Knecht, R. W., Rheault, R., Bunsick, S.M., DeVoe, R., Eichenberg, T., Ewart, J. & Halvorson, H.** 2001. Development of a Policy Framework for Offshore Marine Aquaculture in the 3-200 Mile U.S. Ocean Zone. Center for Marine Policy, University of Delaware. 167 pp.
- Cicin-Sain, B., Bunsick, S.M., Corbin, J., DeVoe, R. M., Eichenberg, T., Ewart, J., Firestone, J., Fletcher, K., Halvorson, H., MacDonald, T., Rayburn, R., Rheault, R. & Thorne-Miller, B.** 2005. Recommendations for an operational framework for offshore aquaculture in U.S. Federal waters. Center for Marine Policy, University of Delaware. 118 pp.

- CINEMAR.** 2005. News Release. New Hampshire Fishermen Are Mussel Bound. (available at http://ooa.unh.edu/news/1_2005/newsMussels.htm).
- Cordell, E.V. & Nolte, D.A.** 1998. Feasibility of using remote sensing to identify the aquaculture potential of coastal waters. Recon Technologies, Inc. Bend, Oregon, USA.
- Corner, R.A., Brooker, A.J., Telfer, T.C. & Ross, L.G.** 2006. A fully integrated GIS-based model of particulate waste distribution from marine fish-cage sites. *Aquaculture* 258: 299–311. (also available at http://www.aqua.stir.ac.uk/GISAP/pdfs/Corner_waste.pdf).
- De Graaf, G., Martin, F., Aguilar-Manjarrez, J. & Jenness, J.** 2003. *Geographic information systems in fisheries management and planning. Technical manual.* FAO Fisheries Technical Paper No. 449. FAO, Rome. 162pp. (also available at <http://www.fao.org/docrep/006/y4816e/y4816e00.htm#Contents>).
- DeMers, M.N.** 2003. Fundamentals of Geographic Information Systems. Second Edition. John Wiley and Sons, Inc. New York, NY, USA. 636 pp.
- Dolmer, P. & Geitner, K.** 2004. Integrated Coastal Zone Management of cultures and fishery of mussels in Limfjorden, Denmark. ICES C.M. 2004/V:07. 9 pp.
- Dooley J.F.** 2005. An Inventory and Comparison of Globally Consistent Geospatial Databases and Libraries. *Environment and Natural Resources Series* No.19 - FAO, Rome. 200 pp. (also available at <http://www.fao.org/docrep/008/a0118e/a0118e00.htm#Contents>).
- Durand, H., Guillaumont, B., Loarer, R., Loubersac, L., Prou, J. & Heral, M.** 1994a. An example of GIS potentiality for coastal zone management: pre-selection of submerged oyster culture areas near Marennes Oléron (France). EARSEL Workshop on Remote Sensing and GIS for Coastal Zone Management. Delft, The Netherlands.
- Durand, H., Guillaumont, B. & Labbe, S.** 1994b. Maquette d'un SIG littoral en vue de la recherche de sites ostreicoles en eau profonde. Gutlar/IFREMER Groupe Sillage. Brest, France. (pages not numbered).
- El Gayar, O.F. & Leung, P.S.** 2006. A multiple-criteria decision making framework for regional aquaculture development. *European Journal of Operational Research* Vol. 133, pp 462-482.
- Environment Bay of Plenty.** 2006. Aquaculture Management Area Project. (available at <http://www.ebop.govt.nz/Coast/AMA-project.asp>).
- Fabbri, K.P.** 2006. A strategic decision support framework for integrated coastal zone management. *Int. J. Environmental Technology and Management*, Vol. 6, Nos. 1/2, pp 206-217.
- FAO.** 1995. Code of conduct of responsible fisheries. FAO, Rome. (available at <http://www.fao.org/DOCREP/005/v9878e/v9878e00.htm#PRE>).
- FAO.** 1997. FAO Technical Guidelines for Responsible Fisheries. Aquaculture Development No. 5. Rome, FAO. 40 pp.
- FAO.** 2006a. FISHSTAT PLUS [online]. Universal software for fishery statistical time series [Version 2.3]. Release date: March 2006. (available at <http://www.fao.org/fi/statist/FISOFT/FISHPLUS.asp>).
- FAO.** 2006b. Glossary of Aquaculture. Rome, FAO. (available at <http://www.fao.org/fi/glossary/aquaculture/>).
- Field, D.** 2001. Practical aquaculture GIS. *INFOFISH International* 5: 27-30.

- Fisher, W.L.** (in press). Recent trends in fisheries geographic information systems. In Nishida, T., Kailola, P. and Hollingworth, C. eds. Proceedings of the Third International Symposium on GIS/Spatial analyses in fishery and aquatic sciences. Fishery-Aquatic GIS Research Group. Kawagoe, Saitama, Japan.
- Fisher, W.L. & Rahel, F.J.** eds. (2004). Geographic information systems in fisheries. American Fisheries Society, Bethesda, Maryland, USA. 275 pp.
- Freddi, A. & Aguilar-Manjarrez, J.** 2005. TCP/BRA/0065. Small-scale seaweed farming in North East Brazil. FAO Aquaculture Newsletter December 2005 - No. 34. FAO, Rome, pp 34-35 (also available at <http://www.fao.org/docrep/009/a0435e/a0435e00.htm>).
- Geitner, K.** 2004. Use of GIS for placement of rainbow trout culture in Denmark. In Nishida, T., Kailola, P. and Hollingworth, C. eds. GIS/Spatial analyses in fishery and aquatic sciences (Vol 2.) Proceedings of the Second International Symposium on GIS/Spatial analyses in fishery and aquatic sciences. pp. 543-558. Fishery-Aquatic GIS Research Group. Kawagoe, Saitama, Japan. 733 pp.
- GEODAS.** 2006. Grid Translator. National Geophysical Data Center. NOAA Satellite and Information Service. (available at http://www.ngdc.noaa.gov/mgg/gdas/gd_designagrid.html).
- GESAMP** (IMO/FAO/UNESCO-IOC/WMO/WHO/IAEA/UN/UNEP Joint Group of Experts on the Scientific Aspects of Marine Environment Protection (GESAMP)). 2001. Planning and management for sustainable coastal aquaculture development. GESAMP Reports and Studies. 68. 45 pp. (also available at <ftp://ftp.fao.org/docrep/fao/007/y1818e/y1818e00.pdf>).
- Goudey, C.** 1998. Model Tests and Operational Optimization of a Self-propelled Open-ocean Fish Farm. In Biran, A. Ed. Proceedings Offshore Technologies for Aquaculture. Haifa, Israel, 13-16 Oct. 1998.
- Gouletquer, P., Soletchnik, P., Le Moine, O., Razet, D., Geariron, P., Faury, N. & Taillade, S.** 1998. Summer mortality of the Pacific cupped oyster *Crassostrea gigas* in the Bay of Marennes-Oleron (France). International Council for the Exploration of the Sea Copenhagen (Denmark) Theme Session on Population Biology. ICES, Copenhagen, Denmark. 20 pp.
- Gouletquer, P. & Le Moine, O.** 2002. Shellfish farming and Coastal Zone Management (CZM) development in the Marennes-Oléron Bay and Charentais Sounds (Charente Maritime, France): A review of recent developments. Aquaculture International, 10(6): 507-525.
- Gunero glu, A., Kose ,E., Eruz, C., Basar, E., Erkebay, S. & Karsli, F.** 2005. Use Of Geographic Information System (GIS) To Select Fish Cage Farming Sites In Surmene Bay, Black Sea. *The Israeli Journal of Aquaculture – Bamidgeh* 57(2), 2005, 81-89.
- Handisyde, N.L., Ross, L.G., Badjeck, M.-C. & Allison, E.H.** 2006. The effects of climate change on world aquaculture. A global perspective. DFID, UK. (available at http://www.aquaculture.stir.ac.uk/GISAP/pdfs/Climate_full.pdf).
- Hoagland, P., Kite-Powell, H. L. & Lin, D.** 2003. Business Planning Handbook For The Ocean Aquaculture Of Blue Mussels. Marine Policy Center Woods Hole Oceanographic Institution, Woods Hole, Massachusetts, USA. 31 pp.
- Hughes Clark, J.E., Wildish, D. & Duxfield, A.** 2002. Acoustic imaging of salmonid mariculture sites. CHC 2002 Proceedings. 17 pp.

- Inglis, G.J., Hayden, B.J. & Ross, A.H.** 2000. An overview of factors affecting the carrying capacity of coastal embayments for mussel culture. NIWA Client Report: CHC00/69 Project No. MFE00505. National Institute of Water and Atmospheric Research Ltd Christchurch New Zealand. 31 pp.
- Island Institute.** 1999. The Maine Guide to Mussel Raft Culture. Island Institute, Rockland, Maine, USA. 32 pp.
- Jacquet, J.-M.** 1987. Remote sensing evaluation of water quality in the Gulf of Nicoya (Costa Rica). Annex 1. in Kapetsky, J.M. McGregor, L. and Nanne E., H. (1987). *A geographical information system and satellite remote sensing to plan for aquaculture development: a FAO-UNDP/GRID cooperative study in Costa Rica*. FAO Fisheries Technical Paper No. 287. Rome, FAO.
- Janssen, R. & van Herwijnen, M.** 2006. A toolbox for multiple criteria decision-making. *Int. J. Environmental Technology and Management*, 6 (1/2): 20-39.
- Jefferson, W.H., Michener, W.K., Karinshak, D.A., Anderson, W., & Porter, D.E.** 1991. Developing data layers for estuarine resource management. Proceedings of GIS/LIS '91. Inforum, Atlanta, Georgia. 1: 331-342.
- Johannessen, J.A., Johannessen, O.M. & Haugan, P.M.** 1988. Remote sensing and model simulation studies of the Norwegian coastal current during the algal bloom in May 1988. The Nansen Remote Sensing Center. Technical Bulletin No. 16.
- Jordan, S.J., Greenhawk, K.N. & Smith, G. F.** 1995. Maryland oyster geographical information system: Management and scientific applications. *Journal of Shellfish Research* 14: 269.
- Jordana, R.** 2004. SIG—Pesca. Sistema de Información Geográfica de la Direcció General de Pesca i Afers Marítims. Lecture delivered at the CIHEAM Advanced Course on Offshore Mariculture, Zaragoza (Spain), 17-22 May 2004 (available at <http://www.easonline.org/agenda/en/description.asp?id=264>).
- Kapetsky, J.M.** 1989. A geographical information system for aquaculture development in Johor State. FAO Technical Cooperation Programme Project. Land and Water Use Planning for Aquaculture Development.TCP/MAL/6754. Field Document. FAO, Rome.
- Kapetsky, J.M.** 2004. Geographic information systems applications in aquaculture. In Fisher, W. L. and Rahel, F.J. eds. *Geographic Information Systems in fisheries*. pp. 13-48. American Fisheries Society, Bethesda, Maryland, USA. 275 pp.
- Kapetsky, J.M. & Aguilar-Manjarrez, J.** 2004. Geographical Information Systems in aquaculture development and management from 1985 to 2002: an assessment. In Nishida, T., Kailola, P. and Hollingworth, C. eds. *GIS/Spatial analyses in fishery and aquatic sciences (Vol 2.)* Proceedings of the Second International Symposium on GIS/Spatial analyses in fishery and aquatic sciences. pp. 393-404. Fishery-Aquatic GIS Research Group. Kawagoe, Saitama, Japan. 733 pp.
- Kapetsky, J.M. & Caddy, J.F.** 1985. Applications of remote sensing to fisheries and aquaculture. FAO Report of the 11th Session of the Advisory Committee on Marine Resources Research, Supplement. FAO, Rome. FAO Fisheries Report, (338) Suppl.: 37-48.
- Kapetsky, J.M. McGregor, L. & Nanne E, H.** 1987. *A geographical information system and satellite remote sensing to plan for aquaculture development: a FAO-UNDP/GRID cooperative study in Costa Rica*. FAO Fisheries Technical Paper No. 287. Rome, FAO. 51 pp.

- Kapetsky, J.M. & Nath, S.S.** 1997. A strategic assessment of the potential for freshwater fish farming in Latin America. *COPESCAL Technical Paper*. No. 10. Rome, FAO. 128 pp. (also available at <http://www.fao.org/DOCREP/005/W5268E/W5268E00.HTM>).
- Kite-Powell, H., Hoagland, P., Jin, D. & Murray, K.** 2003. Open ocean grow-out of finfish in New England: A bioeconomic model. In Pages 319-324. C.J. Bridger and Costa-Pierce B.A, (eds.). *Open Ocean Aquaculture: From Research to Commercial Reality*. The World Aquaculture Society. Baton Rouge, Louisiana, USA.
- Kona Blue Water Farms** 2003. Final Environmental Assessment For An Offshore Open Ocean Fish Farm Project Off Unualoha Point, Kona, Hawaii. Prepared for Land Division, Land and Natural Resources, Hawaii. 110 pp.
- Langan, R. & Horton, F.** 2003. Design, operation and economics of submerged longline mussel culture in the open ocean. *Bulletin of the Aquaculture Association of Canada*. 103-3: 11-20.
- Legault, J.A.** 1992. Using a geographic information system to evaluate the effects of shellfish closures on shellfish leases, aquaculture and habitat availability. *Canadian Technical Report of Fisheries and Aquatic Sciences* 1882E:1-10.
- Leung, P.S.** 2006. Multiple-criteria decision-making (MCDM) applications in fishery management. *Int. J. Environmental Technology and Management*, 6 (1/2): 96-110.
- Loubersac, L., Prou, J. , Kerdreux, M. & Le Moine, O.** 1997. Geomatics for the management of oyster culture leases and production. *CoastGIS'97*. In: D. Green, and G. Massie editors. *Proceedings of the Second International Symposium on GIS and Computer Mapping for Coastal Zone Management*. University of Aberdeen, Scotland. Aug. 29-31, 1997.
- Macias-Rivero, J.C., Castillo y Rey, F. & Zurita, C.A.** 2003. Zonas idóneas para el desarrollo de la acuicultura en el litoral andaluz. Dirección General de Pesca y Acuicultura, Consejería de Agricultura y Pesca, Junta de Andalucía. 43 p. y mapas.
- Malczewski, J.** 1999. *GIS and Multicriteria Decision Analysis*, Wiley, New York.
- Malczewski, J.** 2006. Integrating multiple-criteria analysis and geographic information systems: the ordered weighted averaging (OWA) approach. *Int. J. Environmental Technology and Management*, 6 (1/2): 7-19.
- Marine Aquaculture Task Force.** 2007. Sustainable marine aquaculture: Fulfilling the promise; managing the risk. Marine Aquaculture Task Force, Takoma Park, MD, USA. 128 pp. (available at http://www.pewtrusts.com/pdf/Sustainable_Marine_Aquaculture_final_1_07.pdf)
- Marine Policy Center, Woods Hole Oceanographic Institute.** 2003. Improving the Regulatory Framework for Marine Aquaculture Regional Planning and Economic Decision-making. NOAA National Marine Aquaculture Initiative Final Report (available at <http://www.lib.noaa.gov/docqua/nmaimages2001/finrepwhoi.htm>).
- Martinez-Cordero, F. & Leung, P.S.** 2004. Multicriteria decision making (MCDM)model for regional sustainable shrimp farming development in northwest Mexico. *Aquaculture Economics and Management*. 8 (3/4): 179-192.
- Meaden, G. J.** 2004. Challenges of using geographic information systems in aquatic environments. In Fisher, W. L. and Rahel, F.J. eds. *Geographic information systems in fisheries*. pp. 13-48. American Fisheries Society, Bethesda, Maryland, USA. 275 pp.
- Meaden, G.J. & Do Chi, T.** 1996. *Geographical information systems: applications to marine fisheries*, FAO Fisheries Technical Paper No. 356. Rome, FAO. 335 pp. (also available at <http://www.fao.org/docrep/003/W0615E/W0615E00.HTM>).

- Meaden, G.J. & Kapetsky, J.M.** 1991. *Geographical information systems and remote sensing in inland fisheries and aquaculture*. FAO Fisheries Technical Paper No. 318. Rome, FAO. 262 pp. (also available at <http://www.fao.org/DOCREP/003/T0446E/T0446E00.HTM>).
- Mooneyhan, W.** 1985. Determining aquaculture development potential via remote sensing and spatial modelling. Applications of remote sensing to aquaculture and inland fisheries. Report of the ninth UN/FAO international training course in co-operation with the Government of Italy. FAO Rome RSC Series 27:217-247.
- Muir, J.**, 2004, Offshore Mariculture System Options. Lecture delivered at the CIHEAM Advanced Course on Offshore Mariculture, Zaragoza (Spain), 17-22 May 2004 (available at <http://www.easonline.org/agenda/en/description.asp?id=264>).
- National Geophysical Data Center.** 2006. NOAA Satellite and Information Service (available at <http://www.ngdc.noaa.gov/mgg/fliers/01mgg04.html>).
- National Oceanographic Data Center, NOAA.** 2005. Pathfinder Version 5.0. Sea Surface Temperature Climatologies (available at ftp://data.nodc.noaa.gov/pub/data.nodc/pathfinder/Version5.0_Climatologies/README.txt).
- National Oceanographic Data Center, NOAA.** 2004. Climatologies for the Coral Atlas Project (available at ftp://data.nodc.noaa.gov/pub/data.nodc/pathfinder/CoralAtlas/Information_on_Climatologies.txt).
- National Office for Harmful Algal Blooms,** Woods Hole Oceanographic Institution, Woods Hole, Massachusetts, USA. 2006. (available at <http://www.whoi.edu/redtide/index.html>).
- Nath, S. S., Bolte, J. P., Ross, L. G. & Aguilar-Manjarrez, J.** 2000. Applications of Geographical Information Systems (GIS) for spatial decision support in aquaculture. *Aquaculture Engineering* 23:233-278.
- Newell, C.R.** 2001. Sustainable mussel culture: A millennial perspective. Bulletin of the Aquaculture Association of Canada. 101-2:15-21.
- Newell, C.R.** 2003. Shellfish aquaculture and carrying capacity. Report of a Task Force Meeting. Maine Department of Marine Resources. 5pp. (available at <http://www.maine.gov/dmr/aquaculture/aqtawalpole.htm>).
- Nishida, T., Kailola, P. & Holliingworth, C.** eds. 2001. Proceedings of the First International Symposium on GIS in Fishery Science. Fishery-Aquatic GIS Research Group. Kawagoe, Saitama, Japan. 486 pp.
- Nishida, T., Kailola, P. & Holliingworth, C.** eds. 2004. GIS/Spatial analyses in fishery and aquatic sciences (Vol 2.) Proceedings of the Second International Symposium on GIS/ Spatial Analyses in Fishery and Aquatic Sciences. Fishery-Aquatic GIS Research Group. Kawagoe, Saitama, Japan. 733 pp.
- Nishida, T., Kailola, P. & Holliingworth, C.** eds. (in press). Proceedings of the Third International Symposium on GIS in Fishery Science. Fishery-Aquatic GIS Research Group. Kawagoe, Saitama, Japan.
- Office of Coast Survey.** 2006. Exclusive Economic Zone. NOAA (available at <http://nauticalcharts.noaa.gov/csdl/EEZ.HTM>).
- Pattison, D., dos Reis, D. & Hamilton, S.** 2004. An inventory of GIS-Based Decision Support Tools for MPAs. Prepared by the National Marine Protected Areas Center in cooperation with the National Oceanic and Atmospheric Administration Coastal Services Center. 14 pp (available at <http://www.mpa.gov>).

- Pavasovic, S.** 2004. GIS-tool for site suitability analysis: Example of marine aquaculture. ECO-IMAGINE Virtual Permanent Conference (European Conferences and forum for Integrated Coastal Management and Geo-Information Research) / GI and GIS for ICM, Seville (Spain). (available at <http://www.gisig.it/eco-imagine/VirtualPConference/siviglia-proceedings/presentations.htm>).
- Pérez, O.M.** 2003. GIS-based models for optimisation of marine cage aquaculture in Tenerife, Canary Islands. Institute of Aquaculture, University of Stirling, Scotland, UK. (Ph.D. Thesis).
- Pérez, O.M., Muir, J.M. & Ross, L.G.** 2000. Spatial modelling of aquaculture related development, poverty and needs issues (preliminary study). University Of Stirling. 42 pp. (available at <http://www.aquaculture.stir.ac.uk/GISAP/gis-group/dfid.php>).
- Pérez, O.M., Ross, L.G., Telfer, T.C. & Beveridge, M.C.** 2002. Geographical information systems (GIS) as a simple tool for modelling waste distribution under marine fish cages. Estuarine Coastal and Shelf Science 54:761-768.
- Pérez, O.M., Telfer, T.C. & Ross, L.G.** 2003a. On the calculation of wave climate for offshore cage culture site selection: a case study in Tenerife (Canary Islands). Aquacultural Engineering, 29: 1-21.
- Pérez, O.M., Telfer, T.C. & Ross, L.G.** 2003b. Use of GIS-Based Models for Integrating and Developing Marine Fish Cages within the Tourism Industry in Tenerife (Canary Islands). Coastal Management, 31:355–366.
- Pérez, O.M., Telfer, T.C. & Ross, L.G.** 2005. Geographical information systems-based models for offshore floating marine fish cage aquaculture site selection in Tenerife, Canary Islands. Aquaculture Research 36(10), 946-961.
- Populus, J., Loubersac, L., Prou, J., Kerdreux, M. & Le Moine, O.** 1997. Geomatics for the management of oyster culture leases and production. CoastGIS'97. In: D. Green, and Massie, G. eds. Proceedings of the Second International Symposium on GIS and Computer Mapping for Coastal Zone Management. University of Aberdeen, Scotland. Aug. 29-31, 1997.
- Rodriguez-Benito, C., Haag, C. & Alvial, A.** 2004. Implementation of new technologies to monitor phytoplankton blooms in the south of Chile. Proceedings of the MERIS User Workshop, Frascati, Italy, 10 – 13 November 2003 (ESA SP-549, May 2004).
- Ross, L.G.**, 1998. The use of Geographical Information Systems in Aquaculture: A Review. Paper presented at I Congreso Nacional de Limnología, Michoacán, México. November 1998.
- Ross, L.G., Mendoza, E.A.Q. & Beveridge, M.C.** 1993. The application of geographical information systems to site selection for coastal aquaculture: an example based on salmonid cage culture. Aquaculture 112:165-178.
- Ryan, J.** 2004. Farming the deep blue. Bord Iascaigh Mhara and Irish Marine Institute. Ireland. 67 pp.
- Saaty, T.L.** 1980. The Analytic Hierarchy Process. McGraw-Hill, New York.
- Saaty, T.L.** 2006. Fundamentals of the analytic network process — Dependence and feedback in decision-making with a single network. *Journal of Systems Science and Systems Engineering*. Publisher Systems Engineering Society of China, co-published with Springer-Verlag GmbH. 13 (2): 129-157.
- Salam, A. Md.** 2000. GIS modelling of coastal aquaculture development in Khulna district, Sunderbans, Bangladesh. Institute of Aquaculture, University of Stirling, Scotland, UK. p400. (Ph.D. Thesis).

- Saxby, S.A.** 2002. A review of food availability, sea water characteristics and bivalve growth performance at coastal culture sites in temperate and warm temperate regions of the world. Department of Fisheries, Government of Western Australia. Fisheries Research Report 132. 43 pp.
- Scott, P.C.** 2004. Aquaculture development interactions in Sepetiba Bay, Rio de Janeiro, Brazil. A GIS study. Institute of Aquaculture, University of Stirling, Scotland, UK. (Ph.D. Thesis).
- Scott, P.C. & Ross, L.G.** 1998. O potencial da mitilicultura na Baía de Sepetiba. Panorama da Aquicultura 8(49):13-19.
- Scott, P.C., Vianna, L.F. & de C. Mathias, M.A.** 2002. Diagnóstico da cadeia aquícola para o desenvolvimento da atividade no Estado do Rio de Janeiro. Panorama da Aquicultura 12(71):15-25.
- Scottish Executive** 2000. Final Report of the Joint Government/Industry Working Group on Infectious Salmon Anaemia (ISA) in Scotland. Scottish Executive, Aberdeen, Scotland. 142 pp.
- Scottish Salmon Producers' Organization.** 2005. Code of Good Practice for Scottish Finfish Aquaculture (available at <http://www.scottishsalmon.co.uk/aboutus/codes.asp>).
- Servicio de Pesca y Acuicultura.** 2000. Acuicultura marina en la región de Murcia: Identificación de zonas aptas para el cultivo. Dirección General de Ganadería y Pesca, Consejería de Agricultura, Acuicultura y Medio Ambiente, Región de Murcia. Cartagena, España. 35p. + mapas.
- Sylvia, G. & Anderson, J.L.** 1993. An economic policy model for net-pen salmon farming. In: Hatch, U., Kinnucn, H. (Eds.) Aquaculture: Models and Economics, Westview Press, Boulder, pp. 17-38.
- Simpson, J.J.** 1994. Remote sensing in fisheries: A tool for better management in the utilization of a renewable resource. *Canadian Journal of Fisheries and Aquatic Sciences* 51: 743-771.
- Smith, G.F., Bruce, E.B. & Roach, D.G.** 2001. Remote acoustic habitat assessment techniques used to characterize the quality and extent of oyster bottom in the Chesapeake Bay. *Marine Geodesy*, 24(3): 171-189.
- Smith, G.F. & Greenhawk, K.N.** 1996. Morphological differentiation of the fringing and patch oyster reef types in Chesapeake Bay: A comparative evaluation. *Journal of Shellfish Research* 15: 522.
- Smith, G.F., Greenhawk, K.N. & Homer, M.L.** 1997. Chesapeake Bay oyster reef - An examination of resource loss due to sedimentation. *Journal of Shellfish Research* 16:275.
- Smith, G.F., Greenhawk, K.N., Bruce, E.B., Roach, D.G. & Jordan, S.J.** 2001. A digital presentation of the Maryland oyster habitat and associated bottom types in the Chesapeake Bay (1974-1983). *Journal of Shellfish Research*, 20(1): 197-206.
- Smith, G.F. & Jordan, S.J.** 1993. Utilization of a geographical information system (GIS) for the timely monitoring of oyster population and disease parameters in Maryland's Chesapeake Bay. *Journal of Shellfish Research* 12: 130.
- Smith, G.F., Jordan, S.J. & Greenhawk, K.N.** 1994. An oyster management information system: Integrating biological, physical, and geographical dimensions. *Journal of Shellfish Research* 13:284.
- Smith, G.F., Roach, D.G. & Bruce, E.B.** 2002. The location, composition, and origin of oyster bars in mesohaline Chesapeake Bay. *Estuarine, Coastal and Shelf Science* 56: 391-409.

- Soletchnik, P., Le Moine, O., Faury, N., Razet, D., Geairon, P., & Gouletquer, P.**
1999. Summer mortality of the oyster in the Bay Marennes-Oleron: Spatial variability of environment and biology using a geographical information system (GIS). *Aquatic Living Resources Ressources Vivantes Aquatique* 12:131-143.
- Soares de Souza, E.F.** 2003. FAO Technical Cooperation Programme Project. Small-scale seaweed farming in Northeast Brazil. TCP/BRA/0065. Field Document. FAO, Rome.
- Stickney, R.R., Costa-Pierce, B., Baltz, D.M., Drawbridge, M., Grimes, C., Phillips, S. & Swann, D.L.** 2006. Toward sustainable open ocean aquaculture in the United States of America. *Fisheries* 31(12): 607-610.
- Subasinghe, R.P., Bueno, P., Phillips, M.J., Hough, C., McGladdery, S.E. & Arthur, J.E.** (eds.) 2000. Aquaculture in the Third Millennium - Technical Proceedings of the Conference on Aquaculture in the Third Millennium, Bangkok, Thailand. 20-25 February 2000. NACA, Bangkok and FAO, Rome. 471pp. (also available at http://www.fao.org/fi/meetings/aq2000/tech_proc/third_mill.asp).
- Taconet, M. & Bensch, A.** 2000. Towards the use of Geographic Information Systems as a decision support tool for the management of Mediterranean fisheries. COPEMED. GCP/REM/057/SPA. Informes y Estudios No. 4. (pages not numbered).
- Tiensongrussmee, B., Pontjoprawiro, S. & Mintarjo, K.** 1988. Seafarming resources map. Seafarming Development Project, INS/81/008/Manual/7. FAO, Jarkata, Indonesia. 109 pp.
- Travaglia, C. & Appelkamp, C.** 1985. Applications of Remote Sensing to Aquaculture and Inland Fisheries. Ninth UN/FAO International Training Course in Co-operation with the Government of Italy. Rome, Italy, 10-28 September 1984. RSC SER., No. 27. Rome, FAO. 301 pp.
- Travaglia, C., Profeti, G., Aguilar-Manjarrez, J. & Lopez, N. A.** 2004. *Mapping Coastal Aquaculture and Fisheries Structures by Satellite Imaging Radar: Case Study of the Lingayen Gulf, the Philippines*. FAO Fisheries Technical Paper. No. 459. Rome, FAO. 45 pp. (also available at <http://www.fao.org/docrep/007/y5319e/y5319e00.htm>).
- Valvanis, V.D.** 2002. Geographic Information Systems in Oceanography and Fisheries. Taylor and Francis, London.
- van der Woerd, H.J., Blauw, A., Pasterkamp, R., Tatman, S., Laanem, S. & Peperzak, L.** 2005. Integrated spatial and spectral characterization of harmful algal blooms in Dutch coastal waters. Report 05/09. Institute for Environmental Studies, Amsterdam, The Netherlands. 59 pp.
- Vincenzi S., Caramori, G., Rossi, R. & De Leo, G.A.** 2006. A GIS-based habitat suitability model for commercial yield estimation of *Tapes philippinarum* in a Mediterranean coastal lagoon (Sacca di Goro, Italy). *Ecological Modelling* 193 (2006) 90–104.
- Vincenzi S., Caramori, G., Rossi, R. & De Leo, G.A.** (in press). Estimating clam yield potential in the Sacca di Goro lagoon (Italy) by using a two-part conditional model. *Aquaculture*.
- Vincenzi S., Caramori, G., Rossi, R. & De Leo, G.A.** (in prep). Implications of three habitat 1suitability models for commercial yield estimation of *Tapes philippinarum* in a North Adriatic coastal lagoon (Sacca di Goro, Italy).
- Ueng, Ping-Sheng, Yu, Shyi-Liang, Tzeng, Jiann-Jang, & Ou, Ching-Hsien.** 2001. The effect of water temperature on growth rate of cobia *Rachycentron canadum* in Penghu, Taiwan. 6th Asian Fisheries Forum Book of Abstracts. 252 pp.

- Wright, D.J.**, ed. 2002. Undersea with GIS. ESRI Press, Redlands, California, USA. 253 pp.
- Wright, D.J. & Bartlett, D.J.**, Eds. 2000, Marine and Coastal Geographical Information Systems, Research Monographs in Geographical Information Science, Taylor and Francis, London. 320 pp.
- Young, L., Helsley, C. , Ummoto, K., Merrifield, M., Tasaka, C., Kaiokamale, L., Takahashi, K., Pichaya, V. & Shen, C.** 2003. Aquaculture site identification in Hawai'i using GIS. *INFOFISH International* (6): 13-16.

本文件的目标是展示地理信息系统（GIS）、遥感和制图在海水养殖发展和管理可以发挥的作用。范围是全球性的。方法是采用旨在解决海水养殖许多重要问题的应用实例。

根本目的是激励在海水养殖的政府、企业和教育领域的个人有兴趣更有效地利用这些工具。介绍了空间工具以及在海洋渔业领域利用的例子。挑选了最近的应用情况，以反映现状，让读者自己评估在其自己的专业领域利用这些工具的好处和限制。

按照海水养殖的主线对问题进行了排列：网箱养鱼、贝类养殖和养殖海洋植物。包括了典型研究，说明如何免费下载数据用于预测海水养殖潜力。由于GIS的最终目的是帮助决策，文章包括决策支持工具一节。

Geographic information systems, remote
sensing and mapping for the development and
management of marine aquaculture

ISBN 978-92-5-505646-8 ISSN 1728-7332



9 789255056468

A0906Ch/1/12.09/250