

UNIVERSIDAD DE CANTABRIA



E.T.S. INGENIEROS DE CAMINOS, CANALES Y PUERTOS

DPTO. DE CIENCIAS Y TÉCNICAS DEL AGUA Y DEL MEDIO AMBIENTE

GRUPO DE EMISARIOS SUBMARINOS E HIDRÁULICA AMBIENTAL

TESIS DOCTORAL

**ESTUDIO DE LOS EFECTOS SOBRE EL MEDIO
LITORAL DERIVADOS DE LA IMPLANTACIÓN
DE SANEAMIENTOS INTEGRALES EN LA COSTA
CANTÁBRICA**

Presentada por: **BEATRIZ ECHAVARRI ERASUN**

Dirigida por: **JOSÉ A. JUANES DE LA PEÑA
GERARDO GARCÍA-CASTRILLO RIESGO**

Santander, Enero de 2007

7. BIBLIOGRAFÍA

7.1. REFERENCIAS BIBLIOGRÁFICAS

- ACEM, 1999. Campañas de caracterización preoperacional en el entorno de la Virgen del Mar y de la Bahía de Santander. Diputación Regional de Cantabria.
- Ahn, J.H., Grant, S.B., Surbeck, C.Q., Digiacomo, P.M., Nezlin, N.P. & Jiang, S., 2005. Coastal water quality of stormwater runoff from an urban watershed in southern California. *Environ. Sci. Technol.*, 39: 5940-5953.
- Airoldi, L., 1998. Roles of disturbance, sediment stress, and substratum retention on spatial dominance in algal turf. *Ecology*, 79 (8): 2759-2770.
- Alden, R.W., Weisberg, S.B., Ranasinghe, J.A. & Dauer, D.M., 1997. Optimizing temporal sampling strategies for benthic environmental monitoring programs. *Marine Pollution Bulletin*, 11: 913-922.
- Alsan-Yilmaz, A., Okus, E. & Övez, S., 2004. Bacteriological indicators of anthropogenic impact prior and during the recovery of water quality in a extremely polluted estuary, Golden Horn, Turkey. *Marine Pollution Bulletin*, 49: 951-958.
- Álvarez, C., 1996. Aportaciones metodológicas al estudio de la contaminación litoral originada por vertidos y alivios procedentes de redes de saneamiento urbano. Universidad de Cantabria. Santander.

- Álvarez, C., Revilla, J.A., Juanes, J. A., Nikolov, K., Castanedo, S. & Díaz, R., 1998. Estudio integral del saneamiento del área de S. Sebastián-Pasajes: Problemática ambiental y soluciones propuestas. Proceedings of the IV Jornadas Españolas de ingeniería de Costas y Puertos, 3: 1057-1070.
- Álvarez, C., Juanes, J. A., Revilla, J.A., Nikolov, K., Roldán, A. & Ivanov, V., 1999. Environmental study of the alternatives for the sewer system of a small coastal community in the Bay of Biscay. *Water Science and Technology*, 39 (8): 161-168.
- Aller, R.C., 1994. Bioturbation and remineralization of sedimentary organic matter: effects of redox oscillation. *Chem. Geol.*, 114: 331-345.
- Andersin, A.B., Lassig, G., Parkkonen, L. & Sandler, H., 1978. The decline of macrofauna of the deeper parts of the Baltic proper and the gulf of Finland. *Kieler Meeresforsch. Suppl.*, 4: 23-52.
- Anderson, I.C., Rhodes, M. & Kator, H., 1979. Sublethal stress in *Escherichia coli*: a function of salinity. *Applied and Environmental Microbiology*, 38: 1147-1152.
- Anderson, L. & Rydberg, L., 1988. Trends in nutrient and oxygen conditions within the Kattegat: effects of local nutrient supply. *Estuarine Coastal and Shelf Science*, 26: 559-579.
- Andral, B., Stanisiere, J.Y., Sauzade, D., Damier, E., Thebault, H., Galgani, F. & Boissery, P., 2004. Monitoring chemical contamination levels in the mediterranean based on the use of mussel caging. *Marine Pollution Bulletin*, 49: 704-712.
- Ankley, G., Phipps, G., Leonard, E., Benoit, P., Mattson, V., Kosian, P., Cotter, A., Dierkes, J., Hansen, D. & Mahony, J., 1991. Acid-volatile sulfide as a factor mediating cadmium and nickel bioavailability in contaminated sediments. *Environmental Toxicology and Chemistry*, 10: 1299-1307.
- Ayres, P.A., 1977. Coliphages in sewage and marine environment, en: Skinner, F.A. & Shewan, J.M., (eds.). *Aquatic Microbiology*, Academic Press, New York, 275-298.
- Azpiazu, L.M., Revilla, J.A., García, A., De Frutos, G., Soriano, T., Puente, A., Juanes, J. A. & Álvarez, C., 1999. Estudio ambiental de la situación actual del saneamiento de la Ría del Burgo. Proceedings of the V Jornadas Españolas de Ingeniería de Puertos y Costas, 2, Valencia: 973-986.

- AZTI-SIO, 1994. Campañas de medición de variables biológicas en dos zonas de la costa de Guipuzcoa próximas a Zumaia y Hondarribia. Diputación foral de Guipuzcoa.
- AZTI, 1998. Campañas para la medición de parámetros biológicos en la zona de las marismas de Santoña. Saneamiento de las marismas de Santoña. Ministerio de Medio Ambiente. Dirección General de Obras Hidráulicas y calidad de las aguas. 90 pp.
- AZTI, 2004. Estudio de seguimiento del medio en el entorno del emisario submarino de Ulía. Diputación Foral de Guipuzcoa. 192 pp.
- Bacho, J., Cueto, G., Moreno, S., Moreno, V. & Sánchez, G., 1999. La minería del hierro en el Valle de Villaescusa, J. Martínez, S.L.
- Balls, P.W., Brockie, N., Dobson, J. & Johnston, W., 1996. Dissolved oxygen and nitrification in the Upper Forth estuary during summer (1982-1992): patterns and trends. *Estuarine Coastal and Shelf Science*, 42: 117-134.
- Banden, S.P., Loo, O., Pihl, L. & Rosenberg, R., 1990. Effects of eutrophication on benthic communities including fish: Swedish West Coast. *Ambio*, 19 (3): 113-122.
- Bay, S., Jones, B.H., Schiff, K. & Washburn, L., 2003. Water quality impacts of stormwater discharges to Santa Monica Bay. *Marine Environmental Research*, 56: 205-223).
- Bayen, S., Gong, Y., Chin, H.S., Lee, H.K., Leong, Y.E. & Obbard, J.P., 2004. Androgenic and estrogenic responses of green mussel extracts from Singapore's coastal environment using a human cell-based bioassay. *Environmental Health Perspectives*, 112 (15).
- Bayne, B.L., C.J., Bayne., Carefoot, T.C. & Thompson, R.J., 1976. The physiological ecology of *Mytilus californianus* Conrad. 1. Metabolism and energy balance. *Oecologia*, 22: 211-228.
- Belzunce, M.J., Solaun, O., Gonzalez, J.A., Millán, E. & Pérez, V., 2004a. Contaminants in sediments, en: Borja, A. & Collins, M., (eds.). *Oceanography and marine environment of the Basque country*, 70, Elsevier Oceanography Series, Amsterdam, 283-315.
- Belzunce, M.J., Solaun, O., Valencia, V. & Kaia, V., 2004. Contaminants in estuarine and coastal waters, en: Borja, A. & Collins, M., (eds.). *Oceanography and*

- marine environment of the Basque country, 70, Elsevier Oceanography Series, Amsterdam, 233-251.
- Bellan, G., Bourcier, M., Salen-Picard, C., Arnoux, A. & Casserley, S., 1999. Benthic ecosystems changes associated with wastewater treatment at Marseille: implications for the protection and restoration of the Mediterranean coastal shelf ecosystem. *Water Environment Research*, 71 (4): 483-493.
- Bender, E.A., Cae, T.J. & Gilpin, M.E., 1984. Perturbation experiments in ecology: Theory and practice. *Ecology*, 65: 1-13.
- Berner, E.K. & Berner, R.A., 1996. *Global Environment. Water, Air, and Geochemical Cycles*, Prentice Hall, New Jersey, 376 pp.
- Berner, R., 1980. *Early diagenesis: a theoretical approach*, University Press, Princeton, Princeton, 241 pp.
- Berner, R.A., 1982. Burial of organic carbon and pyrite sulphur in the modern ocean: is geochemical and environmental significance. *American Journal of Science*, 282: 451-473.
- Bernstein, B.B. & Zalinski, J., 1983. An optimum sampling design and power test for environmental biologists. *Journal of Environmental Management*, 16: 335-343.
- Billen, G., Lancelot, C. & Meybeck, M., 1991. N, P and Si retention along the aquatic continuum from land to ocean, en: Mantoura, .F., Martin, J.M. & Wollast, R., (eds.). *Ocean margin Processes in Global Change*, Wiley & Sons, Chichester.
- Birch, P.B., Gordon, D.M. & McComb, A.J., 1981. Nitrogen and phosphorus nutrition of *Cladophora* in the Peel-Harvey system. *Botanica Marina*, 24: 381-387.
- Boesch, D.F. & Rosemberg, R., 1981. Response to stress in marine benthic communities, en: Barrett, G.W. & Rosemberg, R., (eds.). *Stress effects on natural ecosystems*, John Wiley & Sons, New York, 179-200.
- Bolam, S.G., Whomersley, P. & Schratzberger, M., 2004. Macrofaunal recolonization on intertidal mudflats: effect of sediment organic and sand content. *Journal of experimental Marine Biology and Ecology*, 306: 157-180.
- Bonnefont, J., Martin, Y.P., Guiennet, B. & March, M., 1990. Etude experimentale de la décroissance des bacteries fecales en milieu marin quantification, facteurs impliquees. *Water Research*, 24 (3): 355-357.
- Borja, A., 1991. Capacidad de recuperación de las praderas del alga agarofita *Gelidium sesquipedale* sometida a explotación por arranque, en el País Vasco. Departamento de Agricultura y Pesca del Gobierno Vasco. 42 pp.

- Borja, A., Belzunce, M.J. & Valencia, V., 2001. Red de vigilancia y control de la calidad de las aguas litorales del País Vasco: otoño 1999-verano 2000. Departamento de Ordenación del Territorio, Vivienda y Medio Ambiente, Gobierno Vasco. 430 pp.
- Borst, M. & Selvakumar, A., 2003. Particle-associated microorganisms in storm runoff. *Water Research*, 37 (215-223).
- Bosch, A., Sanchez, G., Le Guyader, F., Vanaclocha, H., Haugarreau, L. & Pinto, R.M., 2001. Human enteric viruses in Coquina clams associated with a large hepatitis A outbreak. *Water Science and Technology*, 43 (12): 61-65.
- Bothner, M.H., Casso, M.A., Rendigs, R.R. & Lamothe, P.J., 2002. The effect of the new Massachusetts Bay sewage outfall on the concentrations of metals and bacterial spores in nearby bottom and suspended sediments. *Marine Pollution Bulletin*, 44: 1063-1070.
- Bradl, H., Kim, C., Kramar, U. & Stüben, D., 2005. Interactions of heavy metals, en: Bradl, H., (ed.). *Heavy metals in the environment: origin, interaction and remediation*, 6, Elsevier, Amsterdam, 28-164.
- Bray, J.R. & Curtis, J.T., 1957. An ordination of the upland forest communities of Southern Wisconsin. *Ecol. Monogr.*, 27: 325-349.
- Broman, D., Näf, C., Zebühr, Y. & Lexén, K., 1989. The composition, distribution and flux of PCDDs and PCDFs in settling particulate matter (SPM) - A sediment trap study in the northern Baltic. *Chemosphere*, 19: 445-450.
- Brosnan, T.M. & O'Shea, M.L., 1996. Long-term improvements in water quality due to sewage abatement in the lower Hudson river. *Estuaries*, 19 (4): 890-990.
- Bruland, K., 1983. Trace metals in sea water, en: Riley, J.P. & Chester, R., (eds.). *Chemical Oceanography*, 8, Academic Press, New York, 147-220.
- Bryan, G.W. & Langston, W.J., 1992. Bioavailability, accumulation and effects of heavy metals in sediments with special reference to United Kingdom estuaries: a Review. *Environmental Pollution*, 76: 89- 131.
- Buchanan, J.B., 1984. Sediment analysis, en: Holme, N.A. & McIntyre, A.D., (eds.). *Methods for the study of marine benthos*, 16, Blackwell Scientific Publications, Great Yarmouth, 41-65.
- Butler, D., Friedler, E. & Gatt, K., 1995. Characterising the quantity and quality of domestic wastewater inflows. *Water Science and Technology*, 31 (7): 13-24.

- Butler, P.A., 1965. Commercial fishing investigations in the effects of pesticides on fishes and wildlife. U.S. Fish. Wildlife circular, 226: 67-77.
- CABB, 2001. Informe sobre el control de calidad en estuarios, ríos y playas durante el año 2000. Consorcio de Aguas de Bilbao-Bizkaia. 121 pp.
- Canteras, J.C., Juanes, J. A., Pérez, L. & Koev, K.N., 1995. Modelling the coliforms inactivation in the Cantabrian Sea (Bay of Biscay) from *in situ* and laboratory determinations of T90. Water Science and Technology, 32 (2): 27-44.
- Capone, D.G. & Bauer, J.E., 1992. Microbial processes in coastal pollution, en: Mitchell, R., (ed.). New concepts in Environmental Microbiology, Wiley-Liss, INC, New York, 191-237.
- Carmody, D.J., Pearce, J.B. & Yasso, W.E., 1973. Trace elements in sediments of the New York Bight. Marine Pollution Bulletin, 4: 132-135.
- Casado, J.L., 1997. Desde los orígenes a la época preindustrial. La Bahía de Santander, Editorial Cantabria, S.A., Santander, 56.
- Caswell, H. & Cohen, J.E., 1991. Communities in patchy environments: a model of disturbance, competition and heterogeneity, en: Kolasa, J. & Pickett, S.T.A., (eds.). Ecological heterogeneity, Springer, New York, 97-122.
- CEDEX, 1994. Recomendaciones para la gestión de material de dragado en los puertos españoles. Ministerio de Obras Públicas, Transportes y Medio Ambiente. 45 pp.
- Clarke, K.R., 1993. Non-parametric multivariate analyses of changes in community structure. Australian Journal of Ecology, 18: 117-143.
- Clarke, K.R. & Warwick, R.M., 1994. Changes in marine communities: an approach to statistical analysis and interpretation, Natural Environment Research Council, UK, Plymouth, 144 pp.
- Cloern, J.E. & Oremland, R.S., 1983. Chemistry and microbiology of a sewage spill in South San Francisco. Estuaries, 6: 399-406.
- Colombo, G., Ferrari, I., Ceccherelli, U. & Rossi, R., 1992. Marine eutrophication and population dynamics, Olsen & Olsen, Fredensborg, 395 pp.
- Conley, D.L., Schelske, C. & Stoermer, E.F., 1993. Modification of the biogeochemical cycle of silica with eutrophication. Marine Ecology Progress Series, 101: 179-192.
- Cossa, D., 1988. Cadmium in *Mytilus* spp.: Worldwide survey and relationship between seawater and mussel content. Marine Environmental Research, 26: 265-284.

- Cossa, D., Elbaz-Poulichet, F., Gnassia-Barelli, M. & Roméo, M., 1993. Le plomb en milieu marin. Biogéochimie et écotoxicologie, IFREMER, Plouzane, 76 pp.
- Cserhati, T., 1995. Alkyl ethoxylated and alkylphenol ethoxylated non-ionic surfactants: Interaction with bioactive compounds and biological effects. Environmental Health Perspectives, 103: 358-364.
- Cheung, Y.H. & Wong, M.H., 1992. Trace metal contents of the Pacific oyster (*Crassostrea gigas*) purchased from markets in Hong Kong. Environmental Management, 16 (6): 753-761.
- CHN, 1995. Metodología de estudio de los saneamientos. Confederación Hidrográfica del Norte (C.H.N.). Ministerio de Medio Ambiente. 199 pp.
- D.H.I., 1991. MIKE 21. Coast Hydraulic Oceanography Hydrodynamic Module: User's guide and reference manual. Danish Hydraulic Institute (D.H.I.).
- Dahlen, D., Hunt, C., Emsbo-Mattingly, S. & Keay, K., 2006. Are toxic contaminants accumulating in Massachusetts coastal sediments following startup of the Massachusetts Bay outfall: A comprehensive comparison of baseline and post-diversion periods. Marine Pollution Bulletin (en prensa).
- Daskalakis, K.D. & O'Connor, T.P., 1995. Normalization and elemental sediment contamination in the Coastal United States. Environmental Science and Technology, 29: 470-477.
- Dauvin, J.C., Gomez-Gesteira, J.L. & Salvande-Fraga, M., 2003. Taxonomic sufficiency: an overview of its use in the monitoring of sublittoral benthic communities after oil spills. Marine Pollution Bulletin, 46: 552-555.
- Dauvin, J.C., 2005. Expertise in coastal environmental impact assessments. Marine Pollution Bulletin, 50: 107-110.
- Dauwe, B., Herman, P.M.J. & Heip, C.H.R., 1998. Community structure and bioturbation potential of macrofauna at four North Sea stations with contrasting food supply. Marine Ecology Progress Series, 173: 67-83.
- Davis, J.C., 1975. Minimal dissolved oxygen requirements of aquatic life with emphasis on Canadian species: a review. Journal of the Fisheries Research Board of Canada, 32: 2295-2332.
- Day, J.W.Jr., Hall, C.A.S., Kemp, W.M. & Yañez- Arancibia, A., 1989. Estuarine ecology, John Willey & Sons, New York, 586 pp.
- Dayton, P.K. & Oliver, J.S., 1980. An evaluation of experimental analyses of population and community patterns in benthic marine environments, en: Tenore,

- K.R. & Coull, B.C., (eds.). Marine benthic dynamics, University of South Carolina Press, Columbia, 93-120.
- Delgado, M., Fariñas, M.C., Prieto, D., López, B., Revilla, J.A., Juanes, J. A., Álvarez, C., Puente, A. & Azpiazu, M., 2000. Estudio epidemiológico de las afecciones asociadas con el baño en relación con la calidad de las aguas en las playas de la Bahía de Santander. Universidad de Cantabria. 130 pp.
- Denman, K.L. & Platt, T., 1976. The variance spectrum of phytoplankton in a turbulent ocean. *Journal Marine Research*, 34: 593-601.
- di Toro, D.M., Mahoni, J.D., Hansen, D.J., Schott, K.J., Carlson, A.R. & Ankley, G.T., 1992. Acid volatile sulfide predicts the acute toxicity of cadmium and nickel in sediments. *Environmental Science and Technology*, 26: 96-101.
- Díaz, R.J. & Rosenberg, R., 1995. Marine benthic hypoxia: a review of its ecological effects and the behavioural responses of benthic macrofauna. *Oceanography and Marine Biology Annual Review*, 33: 245-303.
- Díaz-Castañeda, V., Frontier, S. & Arenas, V., 1993. Experimental re-establishment of a soft-bottom community: utilisation of multivariate analyses to characterize different benthic recruitments. *Estuarine Coastal and Shelf Science*, 37: 387-402.
- Díez, I., Satolaria, A. & Gorostiaga, J.M., 2003. The relationship of environmental factors to the structure and distribution of subtidal seaweed vegetation of the Western Basque Country (N Spain). *Estuarine Coastal and Shelf Science*, 56: 1041-1054.
- Dippner, J.W., 1998. Competition between different groups of phytoplankton for nutrients in the Southern North Sea. *Journal of Marine Systems*, 14 (1-2): 181-198.
- Dugdale, R. C. & Goering, J.J., 1967. Uptake of new and regenerated forms of nitrogen in primary productivity. *American Society of Limnology and Oceanography*, 12: 196-206.
- Dyer, M.F., Pope, J.G., Fry, P.D., Law, R.J. & Portmann, J.E., 1983. Changes in fish and benthos catches the Danish coast in September 1981. *Journal of the Marine Biological Association of the United Kingdom*, 63: 767-775.
- Echavarri-Erasun, B (Dir.Tec.), 2004. Emisario de Solvay. Seguimiento y Vigilancia Ambiental. Verano 2003-Primavera 2004. Apia XXI, Asociación Científica de Estudios Marinos (ACEM).

- El-Sarkawi, F., El-Attar, L., Gawad, A. & Molazem, S., 1989. Some environmental factors affecting survival of fecal pathogens and indicator organisms in seawater. *Water Science and Technology*, 21 (1): 115-120.
- Ellis, D., 1985. Taxonomic sufficiency in pollution assessment. *Marine Pollution Bulletin*, 16: 459.
- EPA, 1999. National recommended water quality criteria. EPA 822-Z-99-001. EPA, Office of Water 4303. 25 pp.
- European Commission, 2001. Opinion of the Scientific Committee on veterinary measures relating to public health on *Vibrio vulnificus* and *Vibrio parahaemolyticus* (in raw and uncooked seafood). European Commission. Scientific Committee on Veterinary Measures relating to Public Health. 64 pp.
- Evison, L.M., 1988. Comparative studies on the survival of indicator organisms and pathogens in fresh and sea water. *Water Science and Technology*, 20 (11/12): 309-315.
- Fenchel, T. 1992. Plankton dynamics and Carbon and nutrient flow in Kattegat, Danish Environmental Protection Agency, Copenhagen, 240 pp.
- Fernández, C. & Niell, F.X., 1981. Distribución espacial del fitobentos en los horizontes inferiores del sistema intermareal rocoso de cabo Peñas (Asturias). *Investigación Pesquera*, 45 (2): 309-326.
- Figueiras, F.G., Jones, K.J., Mosquera, A.M., Álvarez-Salgado, X.A., Edwards, A. & MacDougall, N., 1994. Red tide assemblage formation in an estuarine upwelling ecosystem: Ria de Vigo. *Journal of plankton research*, 16 (7): 857-878.
- Flegal, A.R. & Sañudo-Wilhelmy, S.A., 1993. Comparable levels of trace metal contamination in two semi-enclosed embayments: San Diego Bay and South San Francisco Bay. *Environmental Science and Technology*, 27: 1934-1936.
- FLTQ, 1990. Diseño óptimo de la canal de navegación de acceso al puerto de Santander. Fundación Leonardo Torres Quevedo. pp.
- Folmar, L.C., Gardner, G.R., Scheibman, M.P., Magliulo-Cepriano, L., Mills, L.J., Zaroogian, G., Gutjahr-Gobell, R., Haebler, R., Horowitz, D.B. & Denslow, N.D., 2001. Vitellogenin-induced pathology in male summer flounder (*Paralichthys dentatus*). *Aquatic Toxicology*, 54: 101-112.
- Fowler, S.W., Ballestra, S., Rosa, J.L. & Fukai, R., 1983. Vertical transport of particulate-associated plutonium and americium in the upper water column of the Northeast Pacific. *Deep Sea Resources*, 12: 1221-1234.

- Franco, J., 1994. Variabilidad espacio-temporal de la biomasa y producción del fitoplancton en el estuario de Urdaibai. [Ph.D. thesis]. Universidad del País Vasco.
- Frigilos, N. & Zenetos, A., 1988. Elefsis Bay anoxia: nutrient conditions and benthic community structure. *Publicazioni della Stazione Zoologica di Napoli I. Marine Ecology*, 9: 273-290.
- Fugate, D. & Chant, B., 2006. Aggregate settling velocity of combined sewage overflow. *Marine Pollution Bulletin*, 52: 427-432.
- Gadd, G.M. & Griffiths, A.J., 1978. Microorganisms and heavy metal toxicity. *Microbial Ecology*, 4: 303-317.
- Galparsoro, I., Uriarte, A., González, M., Franco, J. & Caballero, A., 2004. Estudio de seguimiento del medio en el entorno del emisario submarino de Ulía. Unidad de Investigación Marina. AZTI. 192 pp.
- Garber, W.F. & Gunnerson, C.G., 1994. Science, technology and willingness to play in ocean disposal of wastes: America misplaced search for equity. An introducing case study of Los Angeles. *Proceedings of IAWQ International Specialized Conference on Marine Disposal Systems*, 9-18.
- García, A., Álvarez, C., Revilla, J.A., Juanes, J. A. & Medina, R., 2005. Environmental design of Bilbao submarine outfall, en: Smith, J.M, (ed.). *Coastal Engineering 2004*, 3, World Scientific Publisher, Singapore: 3251-3263.
- García, A., Koev, K.N., Revilla, J.A., Juanes, J. A. & Álvarez, C., 2002a. Diseño del saneamiento de Urdaibai (País Vasco) bajo una perspectiva de preservación ambiental del litoral. *Memorias I Congreso de Ingeniería Civil, Territorio y Medio Ambiente*, 1, Madrid: 863-881.
- García, A., Revilla, J.A., Medina, R., Álvarez, C. & Juanes, J. A., 2002b. A model for predicting the temporal evolution of dissolved oxygen concentration in shallow estuaries. *Hydrobiologia*: 205-211.
- García-Barcina, J.M., González-Oreja, J.A. & de la Sota, A., 2006. Assessing the improvement of the Bilbao estuary water quality in response to pollution abatement measures. *Water Research*, 40: 951-960.
- García-Castrillo, G., 1997. El ecosistema de la bahía ante el desarrollo acelerado de los últimos años, en: Agero, J., (ed.). *Bahía de Santander*, Editorial Cantabria, Santander, 56.

- García-Castrillo, G. (Dir. Tec.), 2001. Establecimiento de bases previas para la ejecución del proyecto denominado "bahía 2000". Informe Técnico. Consejería de Medio Ambiente del Gobierno de Cantabria. 71+anejos pp.
- García-Castrillo, G. (Dir. Tec.), 2003. Desarrollo del Plan de Vigilancia del saneamiento de la bahía de Santander. Informe Técnico. Consejería de Medio Ambiente del Gobierno de Cantabria. 241+anejos pp.
- George, S.G. & Coombs, T.L., 1977. The effects of chelating agents on the uptake and accumulation of cadmium by *Mytilus edulis*. *Marine Biology*, 39: 261-268.
- GESAMP, 2001. Protecting the oceans from land-based activities. Land-based sources and activities affecting the quality and uses of the marine, coastal and freshwater environment. GESAMP (Joint Group of Experts on the Scientific Aspects of the Marine Environmental Protection). 162 pp.
- GESHA, 2005. Diseño e implantación de la red de control de la calidad del litoral de Cantabria. Informe Inédito, Convenio entre Consejería de Medio Ambiente, Gobierno de Cantabria y Universidad de Cantabria (Grupo de Emisarios Submarinos e Hidráulica Ambiental).
- González, H., Pomares, M., Ramirez, M. & Torres, I, 1999. Heavy metals in organisms and sediments from the discharge zone of the submarine sewage outfall of Havana city, Cuba. *Marine Pollution Bulletin*, 38 (11): 1048-1051.
- González, M., Uriarte, A., Fontán, A., Mader, J. & Gyssels, P., 2004. Marine dynamics, en: Borja, A. & Collins, M., (eds.). *Oceanography and marine environment of the Basque Country*, Elsevier, The Netherlands, 134-157.
- González-Oreja, J.A. & Saiz-Salinas, J.I., 1998. Exploring the relationships between abiotic variables and benthic community structure in a polluted estuarine system. *Water Resources*, 32: 3799-3807.
- Grall, J., Quiniou, F. & Glémarec, M., 2003. Bioévaluation de la qualité environnementale des milieux portuaires, en: Alzieu, C., (ed.). *Bioévaluation de la qualité environnementale des sédiments portuaires et des zones d'immersion*, IFREMER, 89-117.
- Gray, J.S., 1979. Pollution-induced changes in populations. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 286: 545-561.
- Green, R.H., 1979. *Sampling design and statistical methods for environmental biologist*, Wiley-Interscience, New York, 257 pp.

- Greig, B.A. & McGrath, R.A., 1977. Trace metals in sediments of Raritan bay. *Marine Pollution Bulletin*, 8: 188-192.
- Gustafsson, Ö., Buessler, K.O., Geyer, W.R., Moran, S.B. & Gschwend, P.M., 1998. An assessment of the relative importance of horizontal and vertical transport of particle reactive chemicals in the coastal ocean. *Continental Shelf Research*, 18: 805-829.
- Hamenlink, J.L., Landrum, P.F., Bergman, H.L. & Benson, W.H., 1994. *Bioavailability: Physical, chemical, and biological interactions*, CRS Press, Boca Raton, 108 pp.
- Harwoodsears, V. & Gordon, A. S., 1990. Copper-induced production of copper-binding supernatant proteins by the marine bacterium *Vibrio alginolyticus*. *Applied and Environmental Microbiology*, 56: 1327-1332.
- Hazen & Sawyer, P.C., 1994. SEFLOE II Final Report (Southeast Florida Outfall Experiment II). Final Report. Hazen and Sawyer Environmental Engineers and Scientists.
- Herbland, A., Delmas, D., Laborde, P., Sautour, B. & Artigas, F., 1998. Phytoplankton spring bloom of the Gironde plume waters in the Bay of Biscay: early phosphorus limitation and food-web consequences. *Oceanologica acta*, 21 (2): 279-291.
- Herreid, C.F., 1980. Hypoxia in invertebrates. *Comparative Biochemistry and Physiology*, 67: 311-320.
- Hiscock, K., 1979. Systematics surveys and monitoring in nearshore sublittoral areas using diving, en: Nichols, D., (ed.). *Monitoring the Marine Environment*, 55-74, Symposia of the Institute of Biology, London.
- Holland, A.F., Mountford, N.K. & Mihurski, J.A., 1977. Temporal variation in upper bay benthic communities:1. The 9m mud habitat. *Chesapeake Science*, 18: 370-378.
- Holland, A.F., Shaughnessy, A.T. & Hiegel, M.H., 1987. Long-term variation in mesohaline Chesapeake Bay macrobenthos: spatial and temporal patterns. *Estuaries*, 10: 370-378.
- Holland, H.D., 1978. *The Chemistry of the Atmosphere and Oceans*, Wiley Interscience., New York, 351 pp.
- Honkoop, P.J.C., Bayne, B.L., Underwood, A.J. & Svensson, S., 2003. Appropriate experimental design for transplanting mussels (*Mytilus* sp.) in analyses of

- environmental stress: an example in Sydney harbour (Australia). *Journal of Experimental Marine Biology and Ecology*, 297: 253-268.
- Howarth, R.W., 1988. Nutrient limitation of net primary production in marine ecosystems. *Annual Review of Ecology*, 19: 89-110.
- Howarth, R.W., Billen, G., Swaney, D., Townsend, A., Jaworski, N., Lajtha, K., Downing, J.A., Elmgren, R., Caraco, R., Jordan, T., Berendse, F., Freney, J., Kudryarov, V., Murdoch, P. & Zhao-Liang, Z., 1996. Regional nitrogen budgets and riverine N and P fluxes for the drainages to the North Atlantic Ocean: natural and human influences. *Biochemistry*, 35: 75-79.
- Humborg, C., Conley, D.J., Rahm, L., Wulff, F., Cociasu, A. & Ittekkot, V., 2000. Silica retention in river basins: far reaching effects on biogeochemistry and aquatic food webs. *Ambio*, 29: 45-50.
- IFREMER, 1993. *Qualité du milieu marin littoral*, IFREMER, 241 pp.
- Infraestructuras & Ecología, 1998. Campaña para medición de datos biológicos en la zona mareal de Suances. Saneamiento de la cuenca el sistema fluvial Saja-Besaya (Cantabria). Confederación Hidrográfica del Norte. Ministerio de Obras Públicas, Transporte y Medio Ambiente.
- INSUB, 1991. Control del impacto medioambiental producido por el emisario submarino de Zarautz. Informe Inédito. Diputación Foral de Guipuzcoa. 162 pp.
- Iriarte, A., de la Sota, A & Orive, E., 1998. Seasonal variation of nitrification along a salinity gradient in an urban estuary. *Hydrobiologia*, 362: 115-126.
- Iriarte, A., Madariaga, I., Díez-Garagarza, F., Revilla, M. & Orive, E., 1996. Primary plankton production, respiration and nitrification in a shallow temperate estuary during summer. *Journal of Experimental Marine Biology and Ecology*, 208: 127-151.
- Ishio, S., 1990. Red tides: causes, processes and effect, en: Akatsuka, I., (ed.). *Introduction to Applied Phycology*, SPB Academic Publishing, The Hague., 251-306.
- Jaworski, N., Howarth, R.W. & Hetling, L., 1997. Atmospheric deposition of nitrogen oxides onto the land scape contributes to coastal eutrophication in the Northeast United States. *Environmental Science and Technology*, 31: 1995-2004.
- Jobling, S., Nolan, M., Tyler, C.R., Brighty, G. & Sumpter, J.P., 1998. Widespread sexual disruption in wild fish. *Environmental Science and Technology*, 32 (17): 2498-2505.

- Jorgensen, B.B., 1977. Distribution of colorless sulfur bacteria (*Beggiatoa* spp.) in a coastal marine sediment. *Marine Biology*, 41: 19-28.
- Jorgensen, B.B., 1980. Seasonal oxygen depletion in the bottom waters of a Danish fjord and its effect to the benthic community. *Oikos*, 34: 68-76.
- Josefson, A.B. & Rosenberg, R., 1988. Long-term soft-bottom faunal changes in three shallow fjords, west Sweden. *Netherlands Journal of Sea Research*, 22: 149-159.
- Juanes, J.A., Puente, A., Alvarez, C., Revilla, J.A., García, A., García-Castrillo, G., Echávarri, B. & Morante, L., 2004. Environmental monitoring of the sanitation system of Santander (North Spain). Proc. III Int. Conference on Marine Waste Water Discharges, Catania (Italia).
- Juanes, J. A., Revilla, J.A., Álvarez, C., García, A., Puente, A. & Nikolov, K., 2005. Environmental design and monitoring of large submarine outfalls: an integrated approach for coastal protection, en: Zimmerman, C. *et al.*, (ed.). *Environmentally Friendly Coastal Protection*, Springer, Netherlands, 243-253.
- Juanes, J. A., Guinda, X., Puente, A. & Revilla, J.A., 2007a. Macroalgae, a suitable indicator of the ecological status of coastal rocky communities in the NE Atlantic. *Ecological Indicators* (aceptado).
- Juanes, J. A., Revilla, J.A., Álvarez, C., Puente, A. & García, A., 2007b. The protection of coastal ecosystems against urban wastewater discharges based on strategic planning, risk assessment and monitoring techniques. *Aquatic Conservation* (aceptado).
- Justic, D., Rabalais, N.N., Turner, R. & Wiseman Jr, W.J., 1993. Seasonal coupling between riverborne nutrients, net productivity and hypoxia. *Marine Pollution Bulletin*, 26: 184-189.
- Justic, D., Rabalais, N.N. & Turner, R.E., 1995. Stoichiometric nutrient balance and origin of coastal eutrophication. *Marine Pollution Bulletin*, 30 (1): 41-46.
- Karim, M.R., Sekine, M. & Ukita, M., 2002. Simulation of eutrophication and associated occurrence of hypoxic and anoxic condition in a coastal Bay in Japan. *Marine Pollution Bulletin*, 45: 280-285.
- Kemp, W.M., Sampou, P.A., Garber, J., Tuttle, J. & Boynton, W, R., 1992. Seasonal depletion of oxygen from bottom waters of Chesapeake Bay: relative roles of benthic and planktonic respiration and physical exchange processes. *Marine Ecology Progressive Series*, 85: 137-152.

- Kjørboe, T., 1996. Material flux in the water column, en: Jorgensen, B.B. & Richardson, K., (eds.). *Eutrophication in Coastal and Estuarine Studies*, 52, American Geophysical Union, Washington, D.C, 1-19.
- Koev, K.N., Roldán, A., González, C. & Barenengoa, J., 2006. Saneamiento integral de la cuenca baja del sistema fluvial Saja-Besaya. *Ingeniería del agua* (en prensa).
- Koopman, B., Heaney, J.P., Cakir, F.Y., Rembold, M., Indeglia, P. & Kini, G., 2006. *Ocean Outfall Study*. University of Florida. 241 pp.
- Kruse, B. & Rasmussen, B., 1995. Occurrence and effects of a spring oxygen minimum layer in a stratified coastal water. *Marine Ecology Progress Series*, 125: 293-303.
- Labein, S.A., 1993a. Campañas de medición de variables biológicas para los estudios de implantación y seguimiento medioambiental de los emisarios submarinos de Avilés y Gijón (Asturias). Confederación Hidrográfica del Norte. Ministerio de Obras Públicas, Transporte y Medio Ambiente.
- Labein, S.A., 1993b. Campañas de medición de variables biológicas para los estudios de implantación y seguimiento medioambiental de los emisarios submarinos de San Sebastián y Pasajes. Confederación Hidrográfica del Norte. Ministerio de Obras Públicas, Transporte y Medio Ambiente.
- Lacaze, J.C., Le Pemp, X. & Villedon de Naïde, O., 1976. Recherches hydrobiologiques liées à la réalisation de pollutions expérimentales à une grande échelle dans l'estuaire de la Rance. Production primaire en relation avec certains paramètres physicochimiques. *Bulletin Museum Histoire Naturelle de Paris: Écologie générale*, 32 (386): 71-105.
- Lacaze, J.C., 1996. *L'eutrophisation des eaux marines et continentales*, Ellipses, Paris, 191 pp.
- Lassus, P., Bogé, G., Gentien, P., Loarer, R., Pagano, G. & Quiniou, F., 1990. Toxicité des rejets urbains, en: IFREMER, (ed.). *La mer et les rejets urbains*, 11: Actes de Colloques, IFREMER, Bendor, 171-186.
- Lastra, M., 1991. Cartografía y dinámica de la macrofauna bentónica submareal de los sustratos blandos de la bahía de Santander. Universidad de Santiago de Compostela. Santiago.
- Lavin, A., Valdés, L., Gil, L. & Moral, M., 1998. Seasonal and interannual variability in properties of surface water off Santander (Bay of Biscay) (1991-1995).

- Proceedings of the International Conference on oceanography of the Bay of Biscay nº 5, 21, La Rochelle (France): 179-190.
- Legendre, L., 1981. Hydrodynamic control of marine phytoplankton production: the paradox of stability, en: Nihoul, J.C.J., (ed.). Ecohydrodynamics, Elsevier Scientific Publishing, Amsterdam, 191-207.
- Libby, P.S., Hunt, C.D., McLeod, L.A., Geyer, W.R., Keller, A.A., Oviatt, C.A., Borckman, D. & Turner, J.T., 2001. 2000 Annual Water Column Monitoring Report. Massachusetts Water Resources Authority. 196 pp.
- Litaker, W., C. S. Duke, C.S., Kenney, B.E. & Ramus, J., 1987. Short-term environmental variability and phytoplankton abundance in a shallow estuary. I. Winter and summer. *Marine Biology*, 96: 115–121.
- Lobel, P.B. & Wright, D.A., 1982. Relationship between body zinc concentration and allometric growth measurement in *Mytilus edulis*. *Marine Biology*, 66: 145-150.
- Long, E.R., Macdonald, D.D., Smith, S.L. & Calder, F.D., 1995. Incidence of adverse biological effects within ranges of chemical concentrations in marine and estuarine sediments. *Environmental Management*, 19: 81-97.
- Long, E.R., Macdonald, D.D., Smith, S.L. & Calder, F.D., 1995. Incidence of adverse biological effects within ranges of chemical concentrations in marine and estuarine sediments. *Environmental Management*, 19: 81-97.
- López, I., Juanes, J. A. & Gil, J.L., 2006. Desarrollo de un sistema de gestión integral para las aguas de baño. 3^{er} Congreso de Ingeniería Civil, Territorio y Medio Ambiente, Zaragoza (España)
- Llansó, R.J., 1992. Effects of hipoxia on estuarine benthos: the lower Rappahannock River (Chesapeake Bay), a case study. *Estuarine, Coastal and Shelf Science*, 35: 491-515.
- Macdonald, R.W. & Crecelius, E.A., 1994. Marine sediments in the Strait of Georgia, Juan de Fuca and Puget Sound: what can they tell us about contamination?, en: Wilson, R.C.H., Beamish, R.J., Aitkens, F. & Bell, J., (eds.). Review of the marine environment and biota of Strait of Georgia, Puget Sound and Juan de Fuca Strait, Fisheries and Oceans, Vancouver, 101-137.
- Maciolek, N.J., Diaz, R.J., Dahlen, D.T., Hecker, B., Williams, I.P. & Hunt, C., 2005. 2004 Outfall Benthic Monitoring Report. ENQUAD 2005-15. Boston: Massachusetts Water Resources Authority. 134 pp.

- Madariaga, I., González-Azpiri, L., Villate, F. & Orive, E., 1992. Plankton responses to hydrological changes induced by freshets in a shallow mesotidal estuary. *Estuarine Coastal and Shelf Science*, 35: 425–434.
- Madsen, P.F. & Larsen, B., 1986. Accumulation of mud sediments and trace metals in the Kattegat and the Belt Sea. Marine Pollution Laboratory. 68 pp.
- Magnum, C. P. & Van Winkle, W., 1973. Responses of aquatic invertebrates to declining oxygen conditions. *American Zoologist*, 13: 529-541.
- Malone, T., 1991. River flow, phytoplankton production and oxygen depletion in Chesapeake Bay, en: Tyson, R.V. & Pearson, T.H., (eds.). *Modern and ancient continental self anoxia*, 58, The Geological Society Spec. Publ., London, 83-93.
- Maranhão, P., Bengala, N., Pardal, M.A. & Marques, J.C., 2001. The influence of environmental factors on the biology, population dynamics and productivity of *Echinogammarus marinus* Leach (Amphipoda, Gammaridae) in the Mondego estuary (Portugal). *Acta Oecologica*, 22 (3): 139-152.
- Martin, J.H., 1970. The possible transport of trace metals via moulded copepod exoskeletons. *Limnology and Oceanography*, 15 (5): 756-761.
- Martin, J.M. & Whitfield, M., 1983. The significance of river input of chemical elements to the ocean, en: Wong, C.S. & Burton, J.D., (eds.). *Trace metals in sea water*, 265-296, Plenum, New York.
- Mattai, C., Birch, G. & Szymczak, R., 1998. Suboxic, early diagenetic processes in surficial sediments near a deepwater outfall, Sydney, Australia. *Journal of Geochemical Exploration*, 64: 1-17.
- Mattai, C. & Birch, G., 2000. Trace metals and organochlorines in sediments near a major ocean outfall on a high energy continental margin (Sydney, Australia). *Environmental Pollution*, 110: 411-423.
- Mattai, C. & Birch, G., 2001. Detection of anthropogenic Cu, Pb and Zn in continental shelf sediments off Sydney, Australia- A new approach using normalization with cobalt. *Marine Pollution Bulletin*, 42 (11): 1055-1063.
- Mattai, C., Birch, G., Jenkinson, A. & Heijnis, H., 2001. Physical resuspension and vertical mixing of sediments on a high energy continental margin (Sydney, Australia). *Journal of Environmental Radioactivity*, 52: 67-89.
- Mayer, L.M., Chen, Z., Findlay, R.H., Fang, R.H., Sampson, S., Self, R.F.L., Jumars, P.A., Quetel, C. & Donard, O.F.X., 1996. Bioavailability of sedimentary

- contaminants subject to deposit-feeder digestion. *Environmental Science and Technology*, 30: 2641-2645.
- McCambridge, J. & McMeekin, T.A., 1981. Effect of solar radiation and predacious microorganisms on survival of faecal and other bacteria. *Applied and Environmental Microbiology*, 41 (1083-1087).
- McFeters, G.A. & Stuart, D.G., 1972. Survival of coliform bacterial in natural waters: Field and laboratory studies with membrane filter chambers. *Applied and Environmental Microbiology*, 24: 805-811.
- Mearns, A.J. & O'Connor, T.P., 1984. Biological effects versus inputs: The scale of things, en: White, H.H., (ed.). *Concepts in marine pollution measurements*, Maryland Sea Grant College, Maryland, 693-722.
- Menesguen, A., 1992. Modelling coastal eutrophication: the case of french *Ulva* mass blooms, en: Vollenweider, R.A., Marchetti, R. & Viviani, R., (eds.). *The science of the total environment*, Elsevier, Ireland, 979-992.
- Menge, B.A. & Sutherland, J.P., 1976. Species diversity gradients: synthesis of the roles of predation, competition and temporal heterogeneity. *American Naturalist*, 110: 351-369.
- Menzel, D.W., Anderson, J. & Randtke, A., 1970. Marine phytoplankton vary in their response to chlorinated hydrocarbons. *Science*, 167: 1724-1726.
- Merceron, M., 1987. Mortalités de poisons en Baie de Vilaine (juillet 1982). Causes mécanismes, propositions d'actions. Rapport. IFREMER/DERO 87. 14-99 pp.
- Meybeck, M., 1993. C, N, P and S in rivers: from sources to global inputs, en: Wollast, R., Mackenzie, F.T. & Chou, L., (eds.). *Interactions of C, N, P and S Biogeochemical Cycles and Global Change*, 4, NATO ASI Series I: Global Environmental Change, Berlin, 163-193.
- Mickelson, M.J., Hunt, C.D. & Roberts, P.J.W., 2002. Indicator-based monitoring of a coastal wastewater discharge in Boston, Massachusetts. *Proceedings of the 2nd International conference on marine wastewater discharges*, Estambul.
- Michel, P., 1993. L'arsenic en milieu marin. *Biogéochimie et écotoxicologie*, IFREMER, Plouzané, 62 pp.
- Miller, D.C., Muir, C.L. & Hauser, O.A., 2002. Detrimental effects of sedimentation on marine benthos: what can be learned from natural processes and rates? *Ecological Engineering*, 19: 211-232.

- Mistri, M. & Rossi, R., 2000. Levels of taxonomic resolution and choice of transformation sufficient to detect community gradients: an approach to hard-substrata benthic studies. *Italian journal of zoology*, 67: 163-167.
- MOPT, 1992. Estudio geofísico de toda la costa de Cantabria. Dirección General de Costas. Ministerio de Medio Ambiente.
- Moreno-Ventas, X., 1998. Distribución y dinámica del fitoplancton en la bahía de Santander. [Ph. D. thesis]. Universidad de Cantabria.
- Mountford, N.K., Holland, A.F. & Mihursky, J.A., 1977. Identification and description of macrobenthic communities in the Calvert cliffs region of the Chesapeake Bay. *Chesapeake Science*, 14: 360-369.
- Mucha, A.P., Vasconcelos, M.T.S.D. & Bordalo, A.A., 2005. Spatial and Seasonal variations of the macrobenthic community and metal contamination in the Douro estuary (Portugal). *Marine Environmental Research*, 60: 531-550.
- Muir, D.C.G., Lawrence, S., Holoka, M., Fairchild, W.L., Segstro, M.D., Webster, G.R.B. & Servos, M.R., 1992. Partitioning of polychlorinated dioxins and furans between water, sediments and biota in lake mesocosms. *Chemosphere*, 25: 119-124.
- Muñoz, J., 1995. ROM 0.4-95. Acciones climáticas II: VIENTO, Puertos del Estado, Madrid, 185 pp.
- Nakamura, M. & Iguchi, T., 1998. Abnormality of Fish in the Tama River. *Science Journal Kagaku*, 68 (7): 515-519.
- Neves, R., Pina, P., Saraiva, S., Braunschweig, F. & Leitao, P., 2002. Water quality modelling and wastewater management. A case study in the metropolitan area of Lisbon. Proceedings of the 2nd International Conference on marine waste water discharges, Estambul.
- Nikolov, K., Revilla, J.A., Álvarez, C. & Luceño, A., 1994. A design methodology for combined sewer system elements with overflow in coastal zones. *Journal of Coastal Research*, 10 (3): 531-538.
- Nolan, C. & Dahlgaard, H., 1991. Accumulation of metal radiotracers by *Mytilus edulis*. *Marine Ecology Progress Series*, 70: 165-174.
- NRC, 1992. Restoration of aquatic ecosystems. National Academy of Sciences.
- NRC, 2000. Clean Coastal Waters: Understanding and reducing the effects of nutrient pollution. National Academic Press.

- Odum, W.E., Woodwell, G.M. & Wurster, C.F., 1969. DDT residues absorbed from organic detritus by fiddler crabs. *Science*, 164: 576-577.
- Officer, C.B. & Ryther, J.H., 1980. The possible importance of silicon in marine eutrophication. *Marine Ecology Progress Series*, 3: 83-91.
- Officer, C.B., Biggs, R.B., Taft, J.L., Cronin, L.E., Tyler, M.A. & Boynton, W.R., 1984. Chesapeake Bay anoxia: origin, development and significance. *Science*, 233: 22-27.
- Orel, G., Fonda Umani, S. & Aleffi, F., 1993. Ipossie e anossie di fondali marini L'Alto Adriatico e Golfo di Trieste. Regione Autonomia Friuli-Venezia Giulia: Direzione Regionale dell' Ambiente. 104 pp.
- Orive, E., Santiago, J. & Villate, f., 1984. Variabilidad de algunos parámetros físicos y biológicos en la ría de Mundaka. *Cuadernos Area Ciencias del Mar*, 1: 129-138.
- Orive, E., Iriarte, A., Madariaga, I. & Revilla, M., 1998. Phytoplankton blooms in the Urdaibai estuary during summer: physico-chemical conditions and taxa involved. *Oceanologica acta*, 21: 293-305.
- Orozco-Borbón, M.V., Rico-Mora, R., Weisberg, S.B., Noble, R.T., Dorsey, J.H., Leecaster, M.K. & McGee, C.D., 2006. Bacteriological water quality along the Tijuana–Ensenada, Baja California, Mexico shoreline. *Marine Pollution Bulletin*, 52: 1190–1196.
- OSPAR, 1998. Guidelines for the management of dredged material (ANNEX 43 (ref. B-8.2)). OSPAR Commission.
- OSPAR, 2000. Quality Status Report 2000: Region IV: Bay of Biscay and Iberian Coast. OSPAR Commission. 131 pp.
- Otero, X.L., Vidal-Torrado, P., Calvo de Anta, R.M. & Macías, F., 2005. Trace elements in biodeposits and sediments from mussel culture in the Ría de Arousa (Galicia, NW Spain). *Environmental Pollution*, 136: 119-134.
- Otway, N.M., Gray, C.A., Craig, J.R., McVea, T.A. & Ling, J.E., 1996. Assessing the impacts of deep-water sewage outfall on spatially and temporally-variable marine communities. *Marine Environmental Research*, 41: 45-71.
- Paerl, H.W., 2006. Assessing and managing nutrient-enhanced eutrophication in estuarine and coastal waters: Interactive effects of human and climatic perturbations. *Ecological Engineering*, 26: 40-54.

- Paerl, H.W., 2006. Assessing and managing nutrient-enhanced eutrophication in estuarine and coastal waters: Interactive effects of human and climatic perturbations. *Ecological Engineering*, 26: 40-54.
- Park, G.S. & Park, S.Y., 2000. Long-term trends and temporal heterogeneity of water quality in tidal mixed estuarine waters. *Marine Pollution Bulletin*, 40 (12): 1201-1209.
- Parnell, P.E., 2003. The effects of sewage discharge on water quality and phytoplankton on Hawai'ian coastal waters. *Marine Environmental Research*, 55: 293-311.
- Parsons, E.C.M., 1998. Trace metal pollution in Hong Kong: implications for the health of Hong Kong's Indo-Pacific hump-backed dolphins (*Sousa chinensis*). *The Science of the Total Environment*, 214 (1-3): 175-184.
- Parsons, T.R., 1984. Chemical composition, en: Parsons, T.R., Takahashi, M. & Hargrave, B., (eds.). *Biological Oceanographic Processes*, Pergamon Press, Oxford, 37-60.
- Paulson, A.J., Cokelet, E.D., Feely, R.A., Staeart, R.J. & Curl, H.C., 1993. Modelling the decrease in dissolved copper in Puget Sound during the early 1980s. *Environmental Science and Technology*, 27 (13): 2685-2691.
- Pearson, T.H. & Rosenberg, R., 1978. Macrobenthic succession in relation to organic enrichment and pollution of the marine environment. *Oceanography and Marine Biology: an Annual Review*, 16: 229-311.
- Pedersen, F.B., 1994. The oceanographic and biological tidal cycle succession in shallow sea fronts in the North Sea and the English Channel. *Estuarine Coastal and Shelf Science*, 38 (3): 249-269.
- Pelletier, M.C., Burgess, R.M., Ho, K.T., Kuhn, A., McKinney, R.A & Ryba, S.A., 1997. Phototoxicity of individual polycyclic aromatic hydrocarbons and petroleum to marine invertebrate larvae and juveniles. *Environmental Toxicology and Chemistry*, 16: 2190-2199.
- Pelletier, M.C., Burgess, R.M., Cantwell, M.G., Serbst, J.R., Ho, K.T. & Ryba, S.A., 2000. Importance of material transfer of the photoreactive polycyclic aromatic hydrocarbon fluoranthene from benthic adult bivalves to their pelagic larvae. *Environmental Toxicology and Chemistry*, 19: 2691-2698.
- Péres, J.M., 1980. *La pollution des eaux marines*, Bordas, Paris, 231 pp.
- Pérez, M.L., Canteras, J.C., Moreno-Ventas, X. & Valdés, L., 1995. Estudio del fitoplancton de la zona nerítica de Santander en período estival. *Proceedings of*

- the IV Coloquio Internacional sobre Oceanografía del Golfo de Vizcaya: 305-311.
- Petersen, J.K. & Petersen, G.I., 1988. Sandkutlingers respiration og oekst under hypoxi. University of Copenhagen.
- Philip, N.A. & Pritchard, T.R., 1997. Australia's first deepwater sewage outfalls: design considerations and environmental performance monitoring. *Marine Pollution Bulletin*, 33: 140-146.
- Pickering, N., 2001. Phosphorus responsible for excess vegetation, Charles River Watershed Association, Volume 32.
- Pihl, L., Baden, S.P. & Diaz, R.J., 1991. Effects of periodic hipoxia on distribution on demersal fish and crustaceans. *Marine Biology*, 108: 349-360.
- Piriou, J.Y., Ménesguen, A. & Salomón, J.C., 1989. Les marées verts à ulves: conditions necessaries, evolution et comparaison de sites. *Proceedings of the Estuarine and Coasts: spatial and temporal Intercomparisons, 19° Symposium de l'Estuar, France.*: 117-122.
- Porras, R., Bataller, J.V., Murgui, E. & Torregrosa, M.T., 1996. Trophic structure and community composition of polychaetes inhabiting some *Sabellaria alveolata* (L.) reefs along the Valencia Gulf Coast, Western Mediterranean. *Marine Ecology*, 17 (4): 583-602.
- Puente, A., Juanes, J. A., García-Castrillo, G., Álvarez, C., Revilla, J.A. & Gil, J.L., 2002. Baseline study of soft bottom benthic assemblages in the Bay of Santander (Gulf of Biscay). *Hidrobiologia*, 475/476: 141-149.
- Rahel, F.J. & Kolar, C.S., 1990. Trade-offs in the response of mayflies to low oxygen and fish predation. *Oecologia*, 84: 39-44.
- Rasmussen, H. & Jorgensen, B.B., 1992. Microelectrode study of seasonal oxygen uptake in a coastal sediment: role of molecular diffusion. *Marine Ecology Progress Series*, 81: 289-303.
- Redfield, A.C., Ketchum, B.H. & Richards, F.A., 1963. The influence of organisms on the composition of seawater, en: Hill, M.N., (ed.). *The sea*, 2, John Wiley, New York, 26-77.
- Reish, D.J., 1980. Effect of domestic wastes on the benthic marine communities of Southern California. *Helgol. Meeresunters*, 33: 377-383.
- Revilla, J.A. (Dir. Tec.), 1994. Esquema General de Saneamiento del área de Avilés. Informe Inédito. Convenio entre Fundación Leonardo Torres Quevedo

- (Universidad de Cantabria) y Confederación Hidrográfica del Norte (Ministerio de Fomento).
- Revilla, J.A. (Dir. Tec.), 1995. Estudios de implantación y seguimiento medioambiental de emisarios submarinos para aguas residuales en el Cantábrico: vigilancia y control ambiental de los sistemas de saneamiento litoral. Aplicación al saneamiento de San Sebastián-Pasajes. Confederación Hidrográfica del Norte. 260 pp.
- Revilla, J.A., Koev, K.N., Díaz, R., Álvarez, C. & Roldán, A., 1995. Methods for studying dissolved oxygen levels in coastal and estuarine waters receiving combined sewer overflows. *Water Science and Technology*, 32 (2): 95-103.
- Revilla, J.A., Álvarez, C., Juanes, J. A., De Frutos, G., Azpiazu, L.M. & Puente, A., 1998. Dimensionamiento medioambiental del saneamiento de la Bahía de Santander y establecimiento del programa de vigilancia y control ambiental. Informes inéditos de avance 1 a 19. Universidad de Cantabria.
- Revilla, J.A., Álvarez, C., García, A., R., Medina & Juanes, J.A., 2002. Environmental design of submarine outfall according to the European Water Framework Directive. Proceedings of the 2nd Int. Conf. On Marine Waste Water Discharges, Estambul (Turquia): 12.
- Revsbech, N.P., Jorgensen, B.B. & Blackburn, T.H., 1980. Oxygen in the seabottom measured with a microelectrode. *Science*, 207: 1355-1356.
- Richardson, K. & Jorgensen, B.B., 1996. Eutrophication: definition, history and effects, en: Jorgensen, B.B. & Richardson, K, (eds.). *Eutrophication in Coastal and Estuarine Studies*, 52, American Geophysical Union, Washington, D.C., 1-19.
- Ríos, A.F., Fraga, F., Figueiras, F.G., Prego, R. & Pérez, F.F., 1987. Campañas oceanográficas "Asturias I, II, III y IV". Datos Informativos del Instituto de Investigaciones Marinas. 140 pp.
- Roberts, D.E., 1996. Patterns in subtidal marine assemblages associated with deep-water sewage outfall. *Mar. Freshwater Res.*, 47: 1-9.
- Roberts, D.E., 1997. Effects of the North Head Deep-water sewage outfall on nearshore coastal reef macrobenthic assemblages. *Marine Pollution Bulletin*, 33 (7-12): 303-308.
- Roberts, D.E., Smith, A., Ajani, P. & Davis, A.R., 1998. Rapid changes in encrusting marine assemblages exposed to anthropogenic point source pollution: a beyond "BACI" approach. *Marine Ecology Progress Series*, 163: 213-224.

- Rodriguez, J.G., Tueros, I., Borja, A., Belzunce, M.J., Franco, J., Solaun, O., Valencia, V. & Zuazo, A., 2006. Maximum likelihood mixture estimation to determine metal background values in estuarine and coastal sediments within European Water Framework Directive. *Science of the Total Environment* (en prensa).
- Roesler, C.S. & McLeroy-Etheridge, S.L., 1998. Remote detection of harmful algal blooms. *Proceedings of the Ocean Optics XIV, Hawaii*: 12.
- Roldán, A., Koev, K.N., Gonzalez, C., Herrera, J.A. & Fajardo, M., 2006. Saneamiento integral de las marismas de Santoña. *Ingeniería del agua* (en prensa).
- Román, F. & Martínez, J.A., 2000. Emisario submarino de Mompás. Saneamiento de área de San Sebastián-Bahía de Pasajes. *Cimbra*, 337: 31-33.
- Romaña, L.A., Boutier, B., Marchand, M., Loarer, R., Brisset, P., Caillot, A. & Arnoux, A., 1990. Apports en micropollutants organiques et minéraux, en: IFREMER, (ed.). *La mer et les rejets urbains*, 11: Actes de Colloques, IFREMER, Bendor, 153-170.
- Roper, D.S., Smith, D.G. & Read, G.B., 1989. Benthos associated with two New Zealand coastal outfalls. *New Zealand Journal of Marine and Freshwater Research abstracts*, 23: 295-309.
- Rosenberg, R., 1980. Effects of oxygen deficiency on benthic macrofaunal fjords, en: Freeland, H.J., Farmer, D.M. & Levings, C.D., (eds.). *Fjord Oceanography*, Plenum Press, New York, 499-514.
- Rosenberg, R., 1985. Eutrophication: the future marine coastal nuisance? *Marine Pollution Bulletin*, 16: 227-231.
- Ross, P.S., Ellis, G.M., Ikononou, M.G., Barrett-Lennard, L.G. & Addison, R.F., 2000. High PCB concentrations in free-ranging Pacific killer whales, *Orcinus orca*: effects of age, sex and dietary preferences. *Marine Pollution Bulletin*, 40 (6): 505-515.
- Rydberg, L., Edler, L., Floderus, S. & Graneli, W., 1990. Interaction between supply of nutrients, primary production, sedimentation and oxygen consumption in SE Kattegat. *AMBIO*, 19: 134-141.
- Salazar, M.H., Duncan, P.B., Salazar, S.M. & Rose, K.A., 1995. "In situ" bioassays using transplanted mussels: II. Assessing Contaminated Sediment at a Superfund Site in Puget Sound, en: Hughes, J.S., Biddinger, G.R. & Mones, E., (eds.). *Environmental Toxicology and Risk Assessment*. 3rd Symposium, ASTM STP 1218, American Society for Testing and Materials, Philadelphia, 242-263.

- Sangster, J., 1997. Octanol-water partition coefficients: Fundamentals and physical chemistry, John Wiley and Sons, Chichester, 55 pp.
- Santos, C., Catarino, J., Marques, E., Figueiredo, Z., Trancoso, A., Marecos, H. & Neves, R., 2002. Monitoring sea water around the disposal of Guia submarine outfall. Proceedings of the 2nd International Conference on marine waste water discharges, Estambul.
- Sañudo-Wilhelmy, S.A. & Flegal, A.R., 1992. Anthropogenic silver in the southern bight: a new tracer of sewage in coastal waters. *Environmental Science and Technology*, 26: 2147-2151.
- Sato, H. & Aoki, Y., 2002. Mutagenesis by Environmental Pollutants and Bio-Monitoring of Environmental Mutagens. *Current Drug Metabolism*, 3: 311-319.
- Schiff, K. & Bay, S., 2003. impacts of stormwater discharges on the nearshore benthic environment of Santa Monica Bay. *Marine Environmental Research*, 56: 225-243.
- Schiff, K.C., Morton, J. & Weisberg, S.B., 2003. Retrospective evaluation of shoreline water quality along Santa Monica beaches. *Marine Environmental Research*, 56: 245-253.
- Schreiber, D.R., Millero, F.J. & Gordon, A.S., 1990. Production of an extracellular copper binding protein by the heterotrophic marine bacterium *Vibrio alginolyticus*. *Marine Chemistry*, 28 (4): 275-284.
- Schuchardt, B. & Schirmer, M., 1991. Phytoplankton maxima in two coastal plain estuaries. *Estuarine Coastal and Shelf Science*, 31: 187-206.
- Seed, R. & Suchanek, T.H., 1992. Population and community ecology of *Mytilus*, en: Gosling, E., (ed.). *The Mussel Mytilus: Ecology, Physiology, Genetics and Culture*, 87–169, Elsevier, Amsterdam.
- Segar, D.A. & Stamman, E., 1986. A strategy for design of marine pollution monitoring studies. *Water Science and Technology*, 18: 15-26.
- Servos, M.R., Muir, D.C.G. & Webster, G.R.B., 1992. Bioavailability of polychlorinated dibenzo-p-dioxins in Lake enclosures. *Canadian Journal of Fisheries and Aquatic Sciences*, 49: 735-742.
- Sfriso, A., Pavoni, B., Marcomini, A. & Orio, A.A., 1992. Macroalgae, nutrient cycles, and Pollutants in the Lagoon of Venice. *Estuaries*, 15: 517-528.
- Shannon, C.E & Weaver, W., 1963. *The mathematical theory of communication*, University of Illinois, Chicago, 119 pp.

- Silva, S, Ré, A, Pestana, P, Rodrigues, A & Quintino, V, 2004. Sediment disturbance off the Tagus Estuary, Western Portugal: chronic contamination, sewage outfall operation and runoff events. *Marine Pollution Bulletin*, 49: 154-162.
- Smayda, T. J., 1990. Novel and nuisance phytoplankton blooms in the sea: evidence for a global epidemic, en: Granéli, E., Sundström, B., Elder, L. & Anderson, D.M., (eds.). *Toxic Marine Phytoplankton*, Elsevier, New York, 20-40.
- Smayda, T.J., 1997. Bloom dynamics: physiology, behaviour, trophic effects. *American Society of Limnology and Oceanography*, 42: 1132-1136.
- Smith, D. G., Roper, D. S. & Williams, B. L., 1987. Implications for the marine environment, en: Roper, D. S. & Williams, B. L., (eds.). *Coastal outfalls: proceedings of a workshop*, Water and soil miscellaneous publication, 107, National Water and Soil Conservation Authority, Wellington.
- Smith, S.B., 1984. Phosphorus vs. nitrogen limitation in the marine environment. *Limnology & Oceanography*, 29: 1149-1160.
- Smith, S.D.A. & Simpson, R.D., 1993. The effects of pollution on the holdfast macrofauna of the kelp *Eckelonia radiata*: discrimination at different taxonomic levels. *Marine Ecology Progress Series*, 96: 199-208.
- Smith, S.D.A., 1996. The effects of domestic sewage effluent on marine communities at Coffs Harbour, New South Wales, Australia. *Marine Pollution Bulletin*, 33: 309-316.
- Smith, S.L., Macdonald, D.D., Keenleyside, K.A. & Gaudet, C.L., 1996. The development and implementation of Canada Sediment Quality Guidelines, en: Munawar, M. & Dave, G., (eds.). *Development and Progress in Sediment Quality Assessment: Rationale, Challenges, techniques and Strategies*, SPB Academic Publishing, Amsterdam, 233-249.
- Smith, V.H., 1990. Phytoplankton responses to eutrophication in inland waters, en: Akatsuka, I., (ed.). *Introduction to Applied Phycology*, SPB Academic, The Hague, 231-249.
- Solic, M. & Krstulovic, N., 1992. Separate and combined effects of solar radiation, temperature, salinity, and pH on the survival of faecal coliforms in seawater. *Marine Pollution Bulletin*, 24 (8): 411-416.
- Somerfield, P.J. & Clarke, K.R., 1995. Taxonomic levels, in marine community studies, revisited. *Marine Ecology Progress Series*, 127: 113-119.

- Sonnenschein, C. & Soto, A.M., 1998. An update review of environmental estrogen and androgen mimics and antagonists. *Journal of Steroid Biochemistry and Molecular Biology*, 65: 143-150.
- Stachowitsch, M., 1991. Anoxia in the Northern Adriatic Sea: rapid death, slow recovery, en: Tyson, R.V. & Pearson, T.H., (eds.). *Modern and Ancient continental shelf anoxia*, Special Publication 58, Geological Society, London, 19-129.
- Tang, D., Warnken, K. & Santschi, P., 2002. Distribution and partitioning of trace metals (Cd, Cu, Ni, Pb, Zn) in Galveston Bay waters. *Marine Chemistry*, 78: 29-45.
- TEKNIMAP, 1998. Campaña para la medición de datos biológicos en la ría de Mundaka-Gernika. Saneamiento del área de Urdaibai. Ministerio de Medio Ambiente. Dirección general de Obras Hidráulicas y Calidad de las Aguas.
- Terlizzi, A., Fraschetti, S., Guidetti, P. & Boero, F., 2002. The effects of sewage discharge on shallow hard substrate sessile assemblages. *Marine Pollution Bulletin*, 44: 544-550.
- Terlizzi, A., Bevilacqua, S., Fraschetti, S. & Boero, F., 2003. Taxonomic sufficiency and the increasing insufficiency of taxonomic expertise. *Marine Pollution Bulletin*, 46: 556-561.
- Theodorou, A.J., 1994. The ecological state of the Elefsis Bay prior to the operation of the Athens sea outfall. *Water Science and Technology*, 30 (10): 161-171.
- Thiyagarajan, V., Soo, L. & Qian, P.Y., 2005. The role of sediment organic matter composition in larval habitat selection by the polychaete *Capitella* sp. I. *Journal of Experimental Marine Biology and Ecology*, 323: 70-83.
- Thompson, P. & Waite, A., 2003. Phytoplankton responses to wastewater discharges at two sites in Western Australia. *Marine and Freshwater Research*, 54: 721-735.
- Turner, R.E. & Rabalais, N.N., 1994. Coastal eutrophication near the Mississippi river delta. *Nature*, 368: 619-621.
- Tyson, R.V. & Pearson, T.H., 1991. Modern and Ancient continental shelf anoxia: an overview, en: Tyson, R.V. & Pearson, T.H., (eds.). *Modern and Ancient continental shelf anoxia*, Special Publication 58, Geological Society, London, 1-24.
- UK Environment Agency, UKEA, 1997. *The Identification and Assessment of Oestrogenic Substances in Sewage Treatment Works Effluents*. Environment Agency.

- Ukeles, R., 1962. Growth of pure cultures of marine phytoplankton in the presence of toxicants. *Journal of Applied Microbiology*, 10: 532-537.
- Underwood, A.J. & Chapman, M.G., 1996. Subtidal assemblages on rocky reefs at a Cliff-face sewage outfall (North Head, Sydney, Australia): What happened when the outfall was turned off? *Marine Pollution Bulletin*, 33 (7-12): 293-302.
- Underwood, A.J., 1992. Beyond BACI: the detection of environmental impacts on populations in the real, but variable, world. *Journal of Experimental Marine Biology and Ecology*, 161: 145-178.
- Underwood, A.J., 1993. The mechanism of spatially replicated sampling programmes to detect environmental impact in a variable world. *Australian Journal of Ecology*, 18: 99-116.
- Underwood, A.J., 1994. On beyond BACI: sampling designs the might reliably detect environmental disturbances. *Ecological Applications*, 4: 3-15.
- Usabiaga, J.I., Sáenz, J., Valencia, V. & Borja, A., 2004. Climate and Meteorology: variability an its influence on the Ocean, en: Borja, A. & Collins, M, (eds.). *Oceanography and Marine Environment of the Basque Country*, 70, Elsevier Oceanography Series, Amsterdam, 75-95.
- Valencia, V., 1993. Estudio de la variación temporal de la hidrografía y el plancton en la zona nerítica frente a San Sebastián. Resultados 1988-1990. Informe Técnico. Departamento de Agricultura y Pesca, Gobierno Vasco.
- Valencia, V., Motos, L. & Urrutia, J., 1989. Estudio de la variación temporal de la hidrografía y el plancton en la zona nerítica frente a San Sebastián. Informes Técnicos. Departamento de Agricultura y Pesca, Gobierno Vasco. 232 pp.
- Valencia, V., Borja, A. & Franco, J., 1996. Estudio de las variaciones, a corto y largo término, de varios parámetros oceanográficos y meteorológicos de interés para las pesquerías del Golfo de Vizcaya. Informe Técnico. Departamento de Agricultura y Pesca, Gobierno Vasco. 232 pp.
- Valencia, V. & Franco, J., 2004. Main characteristics of the water masses, en: Borja, A. & Collins, M, (eds.). *Oceanography and Marine Environment of the Basque Country*, 70, Elsevier Oceanography Series, Amsterdam, 197-232.
- Vaschenko, M.A., Luchsheva, L.M., Zhadan, P.M., Belcheva, N.N., Syasina, I.G., and & Silina, A.V., 1999. Estimation of ecological conditions in Alekseev Bay (Peter the Great Bay, Sea of Japan) by biological and biogeochemical indices. *Marine Biology*, 25 (2): 96-97.

- Velikova, V., Moncheva, S. & Petrova, D., 1999. Phytoplankton dynamics and red tides (1987-1997) in the bulgarian Black sea. *Water Science Technology*, 39 (8): 27-36.
- Velinsky, D.J., Wade, T.L., Schlekot, C. & Presley, B.J., 1994. Tidal river sediments in the Washington, D.C. area. I. Distribution and sources of trace metals. *Estuaries*, 17: 305-320.
- Verity, P.G., Alber, M. & Bricker, B., 2006. Development of hypoxia in well-mixed subtropical estuaries in the southeastern USA. *Estuaries and Coasts*, 29 (4): 665-673.
- Vernberg, F.J., 1972. Dissolved gasses. Animals, en: Kinne, O., (ed.). *Marine Ecology*, 1, part 3, Wiley-Interscience, London, 1491-1526.
- Viguri, J., Verde, J. & Irabien, A., 2002. Environmental assessment of polycyclic aromatic hydrocarbons (PAHs) in surface sediments of the Santander Bay, Northern Spain. *Chemosphere*, 48: 157-165.
- Vismann, B., 1990. Sulfide detoxification and tolerance in *Nereis (Hediste) diversicolor* and *Nereis (Neanthes) virens* (Annelida: Polychaeta). *Marine Ecology Progress Series*, 59: 229-238.
- Wania, F. & Mackay, D., 1999. The evolution of mass balance models of persistent organic pollutant fate in the environment. *Environmental Pollution*, 100: 223-240.
- Warren, L.M., 1984. How intertidal polychaetes survive at low tide, en: Huttings, P.A., (ed.). *Proceeding of the First International Polychaete Conference*, Sydney, The Linnean Society, New South Wales, 238-253.
- Warwick, R. M., 1988. Effects on community structure of a pollutant gradient-summary. *Marine Ecology Progress Series*, 46: 207-211.
- Warwick, R.M., 2001. Evidence for the effects of metal contamination on the intertidal macrobenthic assemblages of the Fal Estuary. *Marine Pollution Bulletin*, 42 (2): 145-148.
- Warwick, R. M. & Clarke, K.R., 1993. Increased variability as a symptom of stress in marine communities. *Journal of Experimental Marine Biology and Ecology*, 172: 215-226.
- Washburn, L., McClure, K.A., Jones, B.H. & Bay, S.M., 2003. Spatial scales and evolution of stormwater plumes in Santa Monica Bay. *Marine Environmental Research*, 56: 103-125.

- Weigelt, M. & Rumohr, H., 1986. Effects of wide-range oxygen depletion on benthic fauna and demersal fish in Kiel Bay 1981-1983. *Meeresforschung*, 33: 1-22.
- Werme, C & Hunt, C.D., 2003. 2002 Outfall monitoring review. Massachusetts Water Resources Authority. 80 pp.
- Werme, C. & Hunt, C.D., 2006. 2005 Outfall Monitoring Overview. Report 2006-18. Massachusetts Water Resources Authority. 105 pp.
- Westernhagen, H. & Dethlefsen, V., 1983. North Sea oxygen deficiency 1982 and its effects on the bottom fauna. *Ambio*, 12: 264-266.
- Westernhagen, H., Hickel, W., Bauerfeind, E., Niermann, U. & Kröncke, I., 1986. Sources and effects of oxygen deficiencies in the South-eastern North Sea. *Ophelia*, 26: 457-473.
- Wheatcroft, R.A., 1992. Experimental test for particle size-dependent bioturbation in the deep ocean. *Limnol. Oceanogr*, 37 (I): 90-104.
- Widerlund, A., 1996. Early diagenetic remobilization of copper in a near-shore marine sediments: a quantitative pore-water model. *Marine Chemistry*, 54: 41-53.
- Wiens, J.A., 1976. Population responses to patchy environments. *Annual Review of Ecology and Systematics*, 7: 81-120.
- Williamson, R.B., 1991. Urban run-off data book, a manual for the preliminary evaluation of urban stormwater impacts on water quality, Water Quality Centre Publication, New Zealand.
- Wollast, R., 1991. The coastal organic carbon cycle: fluxes, sources and sinks, en: Mantoura, R.F.C., Martin, J.M. & Wollast, R, (eds.). *Ocean margin processes in Global Change*, John Wiley & Sons, Chichester, 365-381.
- Wollenweider, R.A., Marchetti, R. & Viviani, R., 1992. Marine Coastal Eutrophication. Proceedings of an International Conference, Bologna, Italy (21-24 March 1990), "Science of the Total Environment", Elsevier Science Publishers B.V., Amsterdam, 511-524.
- Wood, I.R., Bell, R.G. & Wilkinson, D.L., 1993. The quality of untreated and treated effluent. *Advanced Series on Ocean Engineering*, 8, World Scientific Publishing Co., 20-24.
- Wurster, C.F., 1968. DDT reduces photosynthesis by marine plankton. *Science*, 159: 1474-1475.

- Zabala, A., Rodríguez, J., Pantaleón, M., Revilla, J.A., Tejero, I., Álvarez, C., Juanes, J. A. & De la Serna, I., 1999. Saneamiento de la Bahía de Santander. *Revista de Obras Públicas*, 3389: 29-47.
- Zar, J.H., 1996. *Biostatistical analysis*, Prentice-Hall International, Inc., 662 pp.
- Zenkevitch, L., 1963. *Biology of the seas of the USSR*, Allen & Unwin, London.
- Zhang, B., Gao, X., Song, X., Ma, X. & Sun, D., 1998. The effects of benthic environmental factors on the structure of benthos community in Zhifu Bay, Yellow Sea. *Oceanol. Limnol. Sin./Haiyang Yu Huzhao*, 29 (1): 53-60.
- Zmarzly, D.L., Stebbins, T.D., Pasko, D., Duggan, R.M. & Barwick, K.L., 1994. Spatial patterns and temporal sucession in soft-bottom macroinvertebrates assemblages surrounding an ocean outfall on the northern San Diego shelf: relation to antropogenic and natural events. *Marine Biology*, 118: 293-307.
- Zwolsman, J. J. G., 1994. Seasonal variability and biogeochemistry of phosphorus in the Scheldt estuary, S.W. Netherlands. *Estuarine, Coastal and Shelf Science*, 39: 227-248.

7.2. REFERENCIAS LEGISLATIVAS

- CEC, 1976. Directiva (76/160/CEE) del Consejo, de 8 de Diciembre de 1975, relativa a la calidad de las aguas de baño. Diario Oficial de las Comunidades Europeas. L31, 1-7.
- CEC, 1976. Directiva 76/464/CEE del Consejo, de 4 de mayo de 1976, relativa a la contaminación causada por determinadas sustancias peligrosas vertidas en el medio acuático de la Comunidad. Diario Oficial de las Comunidades Europeas. L129, 23-29.
- CEC, 1982. Directiva 82/176/CEE del Consejo, de 22 de marzo de 1982, relativa a los valores límite y a los objetivos de calidad para los vertidos de mercurio del sector de la electrólisis de los cloruros alcalinos. Diario Oficial de las Comunidades Europeas. L81, 29-34.
- CEC, 1983. Directiva del Consejo 83/513/CEE, de 26 de septiembre de 1983, relativa a los valores límite y a los objetivos de calidad para los vertidos de cadmio. Diario Oficial de las Comunidades Europeas. L291.
- CEC, 1984. Directiva del Consejo 84/491/CEE, de 9 de octubre de 1984, relativa a los valores límite y a los objetivos de calidad para los vertidos de hexaclorociclohexano. Diario Oficial de las Comunidades Europeas. L274.
- CEC, 1988. Directiva 88/347/CEE del Consejo de 16 de junio de 1988 por la que se modifica el Anexo II de la Directiva 86/280/CEE relativa a los valores límite y los objetivos de calidad para los residuos de determinadas sustancias peligrosas comprendidas en la lista I del Anexo de la Directiva 76/464/CEE. Diario Oficial de las Comunidades Europeas. L158, 35-41.
- CEC, 1991. Directiva 90/415/CEE del Consejo de 27 de julio de 1990 por la que se modifica el Anexo II de la Directiva 86/280/CEE relativa a los valores límite y los objetivos de calidad para los residuos de determinadas sustancias peligrosas comprendidas en la lista I del Anexo de la Directiva 76/464/CEE. Diario Oficial de las Comunidades Europeas. L219, 49-57.
- CEC, 1991. Directiva 91/271/CEE del Consejo, de 21 de Mayo de 1991, sobre el tratamiento de las aguas residuales urbanas. Diario Oficial de las Comunidades Europeas. L135, 40-52.

- CEC, 2000. Comisión de las Comunidades Europeas. Directiva 2000/60/CE del Parlamento Europeo y del Consejo, de 23 de Octubre de 2000, por la que se establece un marco comunitario de actuación, en el ámbito de la política de aguas. Diario Oficial de las Comunidades Europeas. L327, 1-72.
- CEC, 2006. Comisión de las Comunidades Europeas. Directiva 2006/7/CE del Parlamento Europeo y del Consejo, de 15 de Febrero de 2006, relativa a la gestión de las aguas de baño. Diario Oficial de las Comunidades Europeas. L64, 37-51.

7.3. CLAVES DE IDENTIFICACIÓN TAXONÓMICA

- Bianchi, C.N., 1981. Guide per il riconoscimento delle specie animali delle acque lagunari e costiere italiane. 5: Policheti Serpuloidei, Consiglio Nazionale delle Ricerche AQ/1/96, 188 pp.
- Campoy, A., 1982. Fauna de Anélidos Poliquetos de la Península Ibérica, EUNSA (Ediciones Universidad de Navarra), Pamplona, 781 pp.
- Chambers, S. & Garwood, P., 1992. Polychaetes from Scottish waters. A guide to identification. Part 3. Family Nereidae, Royal Scottish Museum Studies, R.S.M., Edimburgo, 65 pp.
- Cornelius, P.F.S., 1995a. North-west European Thecate Hydroids and their medusae. Part I, Linnean Society of London, 347 pp.
- Cornelius, P.F.S., 1995b. North-west European Thecate Hydroids and their medusae. Part II, Linnean Society of London, 386 pp.
- Falciai, L. & Minervini, R., 1995. Guía de los crustáceos decápodos de Europa, Ediciones Omega, 299 pp.
- Fauchald, K., 1977. The Polychaete worms. Definitions and keys to the order, families and genera, Natural History Museum of Los Angeles County, 190 pp.
- Fauvel, P., 1923. Faune de France. 5: Polychètes Errantes, Le Chevalier, Paris, 488 pp.
- Fauvel, P., 1927. Faune de France. 16: Polychètes Sédentaires, Le Chevalier, Paris, 494 pp.
- George, J.D. & Hartmann-Schröder, G., 1985. Polychaetes: British Amphinomida, Spintherida and Eunicida, The Linnean Society of London, 221 pp.
- Gibbs, P.E., 1977. British Sipunculans, Linnean Society of London, 35 pp.
- Hayward, P.J., 1985. Ctenostome Bryozoans, Linnean Society of London, 169 pp.
- Hayward, P.J. & Ryland, J.S., 1985. Ciclostome Bryozoans, Linnean Society of London, 147 pp.
- Hayward, P.J. & Ryland, J.S., 1990a. The marine fauna of the British Isles and North-west Europe. Vol I, Oxford Science Publications, 627 pp.
- Hayward, P.J. & Ryland, J.S., 1990b. The marine fauna of the British Isles and North-west Europe. Vol II, Oxford Science Publications, 302 pp.
- Hayward, P.J. & Ryland, J.S., 1998. Cheilostomatous Bryozoa. Part II, Linnean Society of London, 366 pp.

- Hayward, P.J. & Ryland, J.S., 1999. Cheilostomatous Bryozoa. Part I, Linnean Society of London.
- Hiscock, S., 1979. A field Key to the British brown seaweeds, Field Studies Council, 44 pp.
- Hiscock, S., 1987. A field Key to the British red seaweeds.
- Holdich, D.M. & Jones, J.A., 1983. Tanaids, Linnean Society of London, 98 pp.
- Ingle, R.W., 1983. Shallow-water crabs, Linnean Society of London, 206 pp.
- Irvine, L.M., 1983. Seaweeds of the British Isles. Vol I. Part 2A, British Museum (Natural History), 275 pp.
- Irvine, L.M. & Chamberlain, Y.M., 1994. Seaweeds of the British Isles. Vol I. Part 2B, British Museum (Natural History), 115 pp.
- Lincoln, R.J., 1979. British Marine Amphipoda: Gammaridea, British Museum (Natural History), 658 pp.
- Maggs, C.A. & Hommersand, M.M., 1993. Seaweeds of the British Isles. Vol I. Part 3A, British Museum (Natural History), 444 pp.
- Millar, R.H., 1970. British Ascidians, Linnean Society of London, 92 pp.
- Naylor, E., 1972. British marine Isopods, Linnean Society of London, 90 pp.
- Pleijel, F. & Dales, R.P., 1991. Polychaetes: British Phyllodoceans, Typhloscolecoideans and Tomopteroideans, Linnean Society of London & Estuarine and Coastal Sciences Association, 202 pp.
- Poppe, G.T. & Goto, Y., 1991. European Seashells. Vol I, Verlag Christa Hemmen, 352 pp.
- Rioja, E., 1931. Estudio de los Poliquetos de la Península Ibérica, Academia de Ciencias Exactas, Físicas y Naturales de Madrid, 471 pp.
- Rolan, E., 1983. Moluscos de la ría de Vigo. Vol I. Gasterópodos, Universidade Santiago de Compostela, 383 pp.
- Rolan, E., Otero, J. & Rolan, E., 1989. Moluscos de la ría de Vigo. Vol II. Poliplacóforos, bivalvos, escafópodos y cefalópodos, Universidade Santiago de Compostela, 383 pp.
- Ryland, J.S. & Hayward, P.J., 1977. British Anascan Bryozoans, Linnean Society of London, 188 pp.
- Smaldon, G., 1979. British Coastal Shrimps and Prawns, Linnean Society of London, 126 pp.
- Tebble, N., 1966. British Bivalve Seashells, Royal Scottish Museum, 212 pp.

Thompson, T.E. & Brown, G.H., 1976. British Opisthobranch Molluscs, Linnean Society of London, 202 pp.