

1. Curriculum Vitae

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Date de naissance:	17 avril 1955
Etat civil:	mariée, 1 enfant
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Etudes, Diplômes, Titres	
1973	Baccalauréat, section C, Nantes
1973-1975	DEUG B, Nantes
1975-1977	Maîtrise Univ. Bordeaux
1977-1978	Certificat d'Hydrogéologie, Paris 6.
1978-1979	DEA d'Ecologie, URA 258, ENS, Paris 6
1981-1982	Certificat d'Informatique et de Statistique Appliquée, Paris 6
1982	Doctorat 3è cycle, Ecologie, URA 258, ENS, Paris 6, boursière DGRST
1989	Doctorat d'Etat <i>es</i> Sciences Naturelles, spécialité Ecologie, URA 258, ENS, Paris 6
Postes et fonctions occupés	
1982-1984	Chercheur sous contrat, URA 258, ENS, Paris.
1984	Juillet-octobre, séjour post-doctoral, FBA, Windermere, UK
1984-1990	Affectation CR2 CNRS, URA 258 CNRS, URA 258, ENS, Paris 6.
1989	Nomination CR1 CNRS, URA 258, ENS, Paris 6.
1990-1992	Novembre 90-novembre 92, Mise à disposition par le CNRS au laboratoire modélisation des écosystèmes aquatiques, GMMA, Bruxelles
Depuis 1992	Affectation à l'UMR Sisyphe, 7619 CNRS (ex URA 1367) (Structure et Fonctionnement des Hydrosystèmes Continentaux)
Depuis 1997 :	Responsable de l'équipe « Carbone et Nutriments, C-NUTS)
2000	Nomination DR2 CNRS, UMR Sisyphe, 7619 CNRS
Depuis 2007	Direction de la Fédération FR-3020 (Fédération Ile-de-France de Recherche en Environnement)
2010-2013	Création d'un LEA (Laboratoire Européen Associé UPMC-ULB)
2010	Nomination DR1, CNRS, UMR 7619 Sisyphe (Metis depuis 2014), CNRS-Sorbonne Univ.-EPHE
Editrice associée	<i>Estuarine, Coastal and Shelf Science</i> (2001–2004); <i>Regional Environmental Change</i> (2010-2015); <i>Limnology & Oceanography</i> (2015-20--).
Co-éditrice de 5 issues spéciales de revues	(1999 Hydrobiol; 2007 STOTEN ; 2007 Hydrobiol; 2012 REC ; 2017 AEE)
Directrice ou co-directrice	de 24 thèses soutenues (1 en cours)
Publications de 190 articles	dans journaux à comité de lecture (> 90% dans journaux internationaux), 42 chapitres d'ouvrages, H-Facteur 47
Récompense Ruth Patrick Award	(ASLO), 2016 (Santa Fe). https://aslo.org/page/2016-award-recipients
Prix pour 4 thèses encadrées	

2. Publications à comité de lecture

*étudiant (doc ou post doc) encadré

< 1990

1. **Garnier J.**, 1983. Production phytoplanctonique dans un lac de sablière (Lac de Créteil, France). *Acta Oecologica, Oecol. Gener.*, 4:315-329.
2. **Garnier J.** & F. Lescher-Moutoué, 1984. Successions saisonnières phyto- zooplanctoniques dans un écosystème lacustre peu profond (lac de Créteil, France). *Ver. Intern. Verein. Limnol.*, 22: 996-1002
3. **Garnier J.**, 1984. Evolution de la transparence et de la concentration en chlorophylle a des eaux d'une sablière (lac de Créteil, région parisienne) au cours de quatre années (1979 à 1982). *Science de l'eau*, 3: 71:81.
4. Lescher-Moutoué F., **J. Garnier** & R. Pourriot, 1985. Interactions entre les peuplements planctoniques et piscicole du lac de Créteil: impact d'une reproduction exceptionnelle de Percidés. *Bull. Ecol.*, 16 (1): 9-17.
5. **Garnier J.**, F. Lelong & M. Meybeck, 1987. Comparaison physicochimique et biologique de sept bassins artificiels dans les alluvions de la région parisienne. *Naturaliste Can. (Rev. Ecol. Syst.)*, 114: 325-342.
6. **Garnier J.** & B. Montesanto, 1988. The impact of nutrient input from the river Seine on phytoplankton populations in a sand-pit lake (Bignan, NW France). *Archiv. Hydrobiol.*, 112 (4): 517-531.
7. Lacroix G., Ph. Boët, **J. Garnier**, F. Lescher-Moutoué, R. Pourriot & P. Testard, 1989. Controlling factors in the planktonic community in the shallow lake of Créteil. *Int. Rev. Gesam. Limnol.* 74: 353-378
8. **Garnier J.**, P. Blanc & D. Benest, 1989. Estimating a carbon-to-chlorophyll ratio in nanoplankton (Créteil Lake, SE Paris, France). *Water Res. Bull.*, 25: 751-754

1990-1999

9. **Garnier J.** & D. Benest (1990). Seasonal coupling between phyto- and bacterioplankton in a sand-pit lake (Créteil Lake, France). In: Fluxes between trophic levels and through the water sediment interface. *Hydrobiologia*: 207:71-77.
10. Servais P. & **Garnier J.** (1990). Activité bactérienne hétérotrophe dans la Seine: profils d'incorporation de thymidine et de leucine tritiées. *C.R. Acad. Sci. Paris*, t 311, Serie III: 353-360.
11. **Garnier J.** & D. Benest (1991). Planktonic bacterial biomass and seasonal pattern of the heterotrophic uptake and respiration of glucose and amino acids in the shallow sandpit lake of Créteil (Paris suburb, France). *Hydrobiologia*, 209:191-201.
12. **Garnier J.** & D. Benest (1991). Influence of light attenuation on primary production in a shallow sand-pit lake. *Verh. Internat. Verein. Limnol.* 24: 1536-1542.
13. **Garnier J.**, Chestérikoff A., Testard P. & G. Garban (1992). Oligotrophication after a nutrient reduction in a shallow sand-pit lake (Créteil Lake, Paris suburbs, France): a case of rapid restoration. *Annl. Limnol.*, 28:253-262.
14. Servais P., Barillier A. & **Garnier J.** (1995). Determination of the biodegradable fraction of dissolved and particulate organic carbon. *Annl. Limnol.* 31: 75-80.
15. **Garnier J.** & Mourelatos S. (1991). Contribution of grazing in phytoplankton overall losses in a shallow lake (Créteil Lake, France). *Freshwater Biology*, 25: 515-523.
16. **Garnier J.**, Servais P. & Billen G. (1992a). Bacterioplankton in the Seine River: impact of the parisian urban effluents. *Can. J. Microbiol.*, 38: 56-64
17. Pourriot R., **Garnier J.** & Rougier C. (1991). Relations entre les Tintinnides et quelques facteurs biotiques et abiotiques d'un lac de sablière. *Archiv für Protistenkunde*, 140: 335-344.
18. Wood M., Rai H., **Garnier J.**, Kairesalo, Gresens S., Orive E. & Ravaille B. (1992). Practical approaches to algal excretion. *Mar. Microb. Food Webs*, 6: 21-38.

19. **Garnier J.**, Billen G. & Servais S. (1992b). Physiological characteristics and ecological role of small and large sized bacteria in a polluted river (Seine river, France). *Archiv. Hydrobiol. Ergebn. Limnol.* 37:83-94.
 20. **Garnier J.** (1992). Typical and atypical features of phytoplankton in a changing environment: eight years of oligotrophication in a recently created sand-pit lake (Créteil Lake, Paris suburb, France). *Arch. Hydrobiol.*, 125:463-478.
 21. *Barillier A. & **Garnier J.** (1993). Influence of temperature and substrate concentration on bacterial growth yield in Seine River Water batch cultures. *Appl. Environm. Microbiol.*, 59: 1678-1682.
 22. *Barillier A., **Garnier J.** & M. Coste (1993). Experimental reservoir water release: impact on the water quality on a river 60 km downstream (upper Seine River, France). *Water Research*, 27:635-643.
 23. Servais P. & **Garnier J.** (1993). Contribution of heterotrophic bacterial production to the carbon budget of the River Seine (France). *Microb. Ecol.*, 25:19-33.
 24. **Garnier J.**, G. Billen (1993). Ecological interactions in a shallow sand-pit lake (Créteil Lake, France). A modelling approach. In: Nutrient dynamics and biological structure in shallow freshwater and brackish lakes. *Hydrobiologia*, 275/276:97-114.
 25. Billen G., **Garnier J.** & Hanset Ph. (1994). Modelling phytoplankton development in whole drainage networks: the RIVERSTRAHLER model applied to the Seine river system. *Hydrobiologia*, 289:119-137.
 26. **Garnier J.**, Billen G. & Coste M. (1995). Seasonal succession of diatoms and Chlorophyceae in the drainage network of the river Seine: Observations and modelling. *Limnol. Oceanogr.* 40: 750-765.
 27. Petit F., Mendel I., **Garnier J.**, Ficht A. & Buffet-Janvresse C. (1996). Detection moléculaire des virus et bactéries présents dans les eaux estuariennes de la Seine. *Bull. Soc. Fr. Microbiol.* 11 (H.S.): 17-24.
 28. Billen G. & **Garnier J.** (1997). The Phison River Plume: coastal eutrophication in response to changes in land use and water management in the watershed. *Aquat. Microb. Ecol.*, 13 : 3-17.
 29. Even, S., Poulin M., Garnier J., Billen G., Servais P., Chesterikoff A. & Coste M. (1998). River ecosystem modelling: Application of the PROSE model to the Seine river. *Hydrobiologia*, 373/374: 27-45. .
 30. *Akopian M., **Garnier J.** & Pourriot R. (1999a). A large reservoir as a source of zooplankton for the river. structure of the populations and influence of fish predation. *J. Plankton Res.*, 21:285-297.
 31. *Berthe T., **Garnier J.** & Petit F. (1999b)- Quantification de bactéries nitrifiantes du genre Nitrobacter en milieu aquatique (l'estuaire de la Seine, France). Approche moléculaire. *C. R. Acad. Sci.* 322:517-526.
 32. **Garnier J.**, Leporcq B. Sanchez N. & Philippon X. (1999). Biogeochemical budgets in three large reservoirs of the Seine basin (Marne, Seine & Aube reservoirs). *Biogeochemistry*, 47: 119-146
 33. Servais P., **Garnier J.**, Demarteau N., Brion N. & Billen G. (1999d). Supply of organic matter and bacteria to aquatic ecosystems through wastewater effluents. *Water Research*, 33: 3521-3531.
 34. Billen G., **Garnier J.**, Deligne C, Billen C. (1999e). Estimates of early-industrial inputs of nutrients to river systems : implication for coastal eutrophication. *Sci. Total Environ*, 243/244 : 43-52.
- 2000-2004**
35. Billen G. & **Garnier J.** (2000). Nitrogen transfers through the Seine drainage network: a budget based on the application of the Riverstrahler model. *Hydrobiologia*, 410: 139-150.
 36. **Garnier J.**, Billen G. & Palfner L. (1999). Understanding the oxygen budget of the Mosel drainage network with the concept of heterotrophic/autotrophic sequences: the Riverstrahler approach. *Hydrobiologia*, 410: 151-166.

37. **Garnier J.**, Billen G., Sanchez N., & Leporcq B (2000). Ecological functioning of a large reservoir in the upstream basin of the river Seine (Marne reservoir, France). *Regulated River*, 16:51-71.
38. Even S., J.M. Mouchel, P. Servais, P. Le Hir, B. Thouvenin, M. Poulin & **J. Garnier** (2000). Suspended matter and ecological behaviour of rivers and estuaries. Conceptual and numerical modelling. *Verh. Internat. Verein. Limnol.* 27: 238-241.
39. *Akopian M., **Garnier J.**, Testard P., Ficht A (2001a). Impact of the colonization of Zebra Mussel (*Dreissena polymorpha*) in the Seine River. Estimating the benthic communities from the larvae fluxes. *Estuaries*, 24(6) : 1003-1014.
40. **Garnier J.**, Servais P., Billen G., Akopian M. & Brion N. (2001b). The oxygen budget in the Seine estuary: balance between photosynthesis and degradation of organic matter. *Estuaries* 24(6) : 964-977.
41. Billen G., **Garnier J.**, Ficht A. & Cun C. (2001). Modelling the response of water quality in the Seine Estuary to human activity in its watershed over the last 50 years. *Estuaries*, 24(6) : 977-993.
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43. *Akopian M., **Garnier J.** & Pourriot R. (2002b). Zooplankton in an aquatic continuum: from the river Marne and its reservoir to the Seine estuary. *CR. Acad. Sci.*, 325: 807-818.
44. **Garnier J.**, d'Ayguésvives A., Billen G., Conley D. & Sferratore A. (2002d). Silica dynamics in the hydrographic network of the Seine River. *Oceanis*, 28 : 487-508
45. *Cébron A., Berthe T. & **Garnier J.** (2003). Nitrification and Nitrifying bacteria in the lower Seine River and estuary. *Applied Envir. Microb.*, 69: 7091-7100.
46. *Cébron A., Coci M., **Garnier J.** & Laanbroek H.J. (2004). DGGE analysis of the Ammonia Oxidizing Bacterial Community structure in the lower Seine River: impact of the Paris wastewater effluents. *Applied Envir. Microb.* 70: 6726-6737.

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47. *Némery J., **Garnier J.** & Morel C. (2005). Phosphorus budget in the Marne watershed (France): urban vs. diffuse sources, dissolved vs. particulate forms. *Biogeochemistry*, 72(1):35-66
48. Billen G., Garnier J. & Rousseau V. (2005). Nutrient fluxes and water quality in the drainage network of the Scheldt basin over the last 50 years. *Hydrobiologia*, 540: 47-67.
49. Cugier Ph., Billen G., Guillaud, J.F., Garnier, J. & Ménesguen A. (2005). Modelling the eutrophication of the Seine Bight (France) under historical, present and future riverine nutrient loading. *J. Hydrol.* 304: 381-396.
50. **Garnier J.**, Némery J., Billen G. & Théry S. (2005). Nutrient dynamics and control of eutrophication in the Marne River system: modelling the role of exchangeable phosphorus. *J. Hydrol.* 304: 397-412.
51. *Cébron A., **Garnier J.** & Billen G. (2005). Nitrous oxide production and nitrification kinetics by bacteria communities naturally present in river water (the lower Seine, France). *Aquat. Microb. Ecol.*, 41: 25-38
52. *Le Thi Phuong Q. , Billen G., **Garnier J.**, Théry S., Fézard C. & Chau Van M. (2005). Nutrient (N, P) budgets for the Red River basin (Vietnam and China). *Global Biogeochem. Cycles*, 19, GB2022, doi:10.1029/2004GB002405.
53. *Sferratore A., Billen G., **Garnier J.** & Théry S. (2005). Modelling Nutrient (N, P, Si) Budget in the Seine Watershed: Application of the Riverstrahler Model using Data from Local to Global Scale Resolution. *Global Biogeochemical Cycles*. 19, GB4S07, doi:10.1029/2005GB002496, 2005

54. *Cébron A. & **Garnier J.** (2005). Nitrobacter and Nitrospira genera as representative of the nitrite oxidizing bacteria: detection, quantification and growth along the lower Seine River. *Wat. Res.*, 39: 4979-4992.
55. **Garnier J.**, Cébron A., Tallec G., Billen G., Sebilo M, Martinez A. (2006). Nitrogen behaviour and nitrous oxide emission in the tidal Seine River estuary (France) as influenced by human activities in the upstream watershed. *Biogeochemistry*, 77: 305 – 326.
56. Servais P. & Garnier J. (2006). Organic carbon and bacterial heterotrophic activity in the maximum turbidity zone of the Seine estuary (France). *Aquatic Sci.* (68): 78–85
57. Sebilo M., Billen G., Mayer B., Billiou D., Grably M., **Garnier J.** & Mariotti A. (2006). Assessing nitrification and denitrification in the Seine River and Estuary using chemical and isotopic techniques. *Ecosystems*, 9: 564–577.
58. *Tallec G., **Garnier J.**, Billen G., Gousailles M. (2006). Nitrous oxide emissions from secondary activated sludge in nitrifying conditions of urban wastewater treatment plants: effect of oxygenation level. *Water Research*, 40: 2972 - 2980.
59. **Garnier J.**, Laroche L., Pinault S. (2006). Determining the domestic specific loads of two wastewater plants of the Paris conurbation (France) with contrasted treatments: a step for exploring the effects of the application of the European Directive. *Water Res.* 40:3257 – 3266.
60. *Sferratore A., **Garnier J.**, Billen G., Conley D., Pinault S. (2006). Silica diffuse and point sources in the Seine watershed. *Environmental Science & Technology*. 40: 6630-6635.
61. *Tallec G., **Garnier J.**, Gousailles M. (2006). Nitrogen removal in a wastewater treatment plant through biofilters: nitrous oxide emissions during nitrification and denitrification: *Bioprocess Biosyst Eng* (2006) 29:323–333
62. Even S., Ficht A., Thouvenin B., **Garnier J.**, Servais P. & P. Le Hir (2006). Modelling the carbon cycle in the turbidity maximum of the Seine Estuary. *Ver. Intern. Verein. Limnol.* 29/5: 2263-2266.
63. *Le Thi Phuong Q., **Garnier J.**, Billen G. Théry S. & Chau Van M. (2007). Hydrological regime and suspended load of the Red River system (Vietnam): observation and modelling. *J. Hydrol.* 334, 199– 214.
64. Lancelot C., Gypens N., Billen G., **Garnier J.** & Roubéix V. (2007). Linking marine eutrophication to land use: an integrated river-ocean mathematical tool: The Southern Bight of the North Sea over the past 50 years. *Journal of Marine Systems* 64 (2007) 216–228. <http://dx.doi.org/10.1016/j.jmarsys.2006.03.010>.
65. Ducharne, A., C. Baubion, M. Benoit, G. Billen, N. Brisson, **J. Garnier**, H. Kieken, S. Lebonvallet, E. Ledoux, B. Mary, C. Mignolet, X. Poux, E. Sauboua, C. Schott, S. Théry, P. Viennot (2007) Long term prospective of the Seine river system: confronting climatic and direct anthropogenic changes. *The Science of the Total Environment*. 375 : 292–311
66. **Garnier, J.** & G. Billen (2007). Production vs. Respiration in river systems: an indicator of a "good ecological status" evaluation. *The Science of the Total Environment*, 375 :110–124
67. Billen, G., **Garnier, J.**, Némery, J., M. Sebilo, A. Sferratore S. Barles, P. Benoit & M. Benoit (2007) Nutrient transfers through the Seine river continuum: mechanisms and long term trends. *The Science of the Total Environment*, 375: 80–97. doi:10.1016/j.scitotenv.2006.12.005
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74. Even S., Thouvenin B., Bacq N., Billen G., **Garnier J.**, Guezennec L., Blanc S., Ficht A. & P. LeHir (2007). An integrated approach for a forecast study of human pressure's impacts on the Seine estuary. *Hydrobiologia*. 588: 13-29
75. *Némery J. & **Garnier, J.** (2007). Dynamics of Particulate Phosphorus in the Seine estuary (France). *Hydrobiologia*, 588: 271-290.
76. Billen, G., **Garnier, J.** (2007). River basin nutrient delivery to the coastal sea: assessing its potential to sustain new production of non siliceous algae. *Mar. Chem*, 106: 148-160. doi: 10.1016/j.marchem.2006.12.017
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79. *Tallec G., **Garnier J.**, Billen G., Gousailles M. (2008). Nitrous oxide emissions from denitrifying activated sludge of urban wastewater treatment plants, under anoxia and low oxygenation. *Bioresource Technology*, 99: 2200–2209doi:10.1016/j.biortech.2007.05.025
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84. *Thieu V., Billen G., **Garnier J.** (2009). Nutrient transfer in three contrasting NW European watersheds: the Seine, Somme, and Scheldt Rivers. A comparative application of the Seneque/Riverstrahler model, *Water Research*, 43(6):1740- 1754
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92. *Luu T.N.M., **Garnier J.**, Billen G., Orange D., Némery J., LE Lan Anh (2010). Hydrological regime and water budget of the Red River Delta (Northern Vietnam). *J. Asian Earth Sciences*. 37: 219–228
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