

## Lorenzo Ciannelli



Born in Napoli (Italy) on 7/9/1969

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**Current Position:** Dirigente di ricerca

**Current Affiliation:**

Integrative Marine Ecology Department, Stazione Zoologica Anton Dohrn, Napoli (Italy)

### Education/Training/Experience

<b>Institute and Location</b>	<b>Degree / Function</b>	<b>Year</b>	<b>Field of Study</b>
Universita' degli studi di Napoli	Laurea	1988-93	Biological sciences
University of Washington, Seattle USA	PhD	1996-2002	Aquatic and Fisheries Sciences
Alaska Fisheries Science Center, NOAA, Seattle, USA	Postdoc	2002-2003	Fisheries oceanography
University of Oslo, Norway	Postdoc	2003-2006	Fisheries oceanography
Oregon State Univrsity, Corvalli USA	Professor	2007-present	Fisheries oceanography
Stazione Zoologica Anton Dohrn, Napoli, Italy	Dirigente ricerca	2021-present	Fisheries oceanography

### Appointments and awards

*Summa cum Laude*, Biology Laureate, Universita' di Napoli, 1993

Best poster award at the PICES Ecosystem Indicator Symposium, Paris, 2004

International Programs Faculty Grants and Awards, Oregon State University, 2008

Jack Dymond Excellence in Mentoring Award, 2010

### Other

Subject matter editor for *Ecology* and *Ecological Monographs*  
Reviewing editor for *Climate Research*

## Students' Supervision

Supervisor of 18 Ph.D. and M.S. students and 9 Postdoctoral researchers (past and present)

## Publications

Author of 98 publications on ISI-journals (h index: 31, Web of Science) and 3 book chapters

### *List of publications of the last 10 years:*

#### Peer-reviewed

- 1) Ciannelli L, Neuheimer AB, Stige LC, Frank KT, Durant JM, Hunsicker M, Rogers LA, Porter S, Ottersen G, Yaragina NA (2021) Ontogenetic spatial constraints of sub-arctic marine fish species. *Fish and Fisheries* (In press)
- 2) (\*) Sjostrom AJC, Ciannelli L, Conway F, Wakefield WW (2021) Gathering local ecological knowledge to augment scientific and management understanding of a living coastal resource: The case of Oregon's nearshore groundfish trawl fishery. *Marine Policy* 131. <https://doi.org/10.1016/j.marpol.2021.104617>
- 3) (\*) Correa GM, McGilliard CR, Ciannelli L, Fuentes C (2021) Spatial and temporal variability in somatic growth in fisheries stock assessment models: evaluating the consequences of misspecification. *ICES Journal of Marine Science* 78, 1872–1886. <https://doi.org/10.1093/icesjms/fsab096>
- 4) (\*) Schwartzkopf BD, Ciannelli L, Garza JC, Heppell SA (2021) Growth of juvenile black rockfish (*Sebastes melanops*) during estuarine residence. *Environmental Biology of Fishes* 104, 851–865. <https://doi.org/10.1007/s10641-021-01106-7>
- 5) (\*) Howard RA, Ciannelli L, Wakefield W, Fewings MR (2021) The effects of climate, oceanography, and habitat on the distribution and abundance of northern California Current continental shelf groundfishes. *Fisheries oceanography* <https://doi.org/10.1111/fog.12553>
- 6) Laurel BJ, Hunsicker ME, Ciannelli L, Hurst TP, Duffy-Anderson J, O'Malley R, Behrenfeld M. (2021) Regional warming exacerbates match/mismatch vulnerability for cod larvae in Alaska. *Progress in oceanography* 193. <https://doi.org/10.1016/j.pocean.2021.102555>
- 7) (\*) Barcelo C, Brodeur RD, Ciannelli L, Daly EA, Risien CM, Saldias GS, Samhuri JF (2021) Time-Varying Epipelagic Community Seascapes: Assessing and Predicting Species Composition in the Northeastern Pacific Ocean. *Frontiers in marine science* 8. <https://doi.org/10.3389/fmars.2021.586677>
- 8) (\*) Correa GM, Ciannelli L, Barnett LAK, Kotwicki S, Fuentes C (2020) Improved estimation of age composition by accounting for spatiotemporal variability in somatic growth. *Canadian Journal of Fisheries and Aquatic Sciences* 77, 1810–1821. <https://doi.org/10.1139/cjfas-2020-0166>
- 9) Thorson JT, Ciannelli L, Litzow MA (2020) Defining indices of ecosystem variability using biological samples of fish communities: A generalization of empirical orthogonal functions. *Progress in oceanography* 181. <https://doi.org/10.1016/j.pocean.2019.102244>
- 10) Ciannelli L, Tolkova I, Lauth R, Puerta P, Helsler T, Gitelman A, Thompson G (2020) Spatial, interannual, and generational sources of trait variability in a marine population. *Ecology* 101(1)
- 11) Stige LC, Rogers LA, Neuheimer AB, Hunsicker ME, Yaragina NA, Ottersen G, Ciannelli L, Langangen O, Durant JM (2019) Density- and size-dependent mortality in fish early life stages. *Fish and Fisheries* 20, 962–976. <https://doi.org/10.1111/faf.12391>

- 12) Litzow M, Ciannelli L, Cunningham CJ, Johnson B, Puerta P. (2019) Nonstationary effects of ocean temperature on Pacific salmon productivity. *Canadian Journal of Aquatic and Fisheries Sciences* 76 (11), pp.1923-1928
- 13) Litzow M, Ciannelli L, Puerta P, Wettstein J, Rykaczewski RR, Opiekun M (2019) Non-stationary environmental and community relationships in the North Pacific Ocean. *Ecology* 100(8)
- 14) (\*) Stowell MA, Copeman LA, Ciannelli L, Ryer CH (2019). Variability in juvenile English sole condition relative to temperature and trophic dynamics along an Oregon estuarine gradient. *Estuaries and Coasts* 42 (7), pp.1955-1968
- 15) (\*) Puerta P, Ciannelli L, Johnson B (2019) A simulation framework for evaluating multi-stage sampling designs in populations with spatially structured traits. *Peer J* 7
- 16) (\*) Puerta P, Ciannelli L, Rykaczewski R, Opiekun M, Litzow M (2019) Do Gulf of Alaska fish and crustacean populations show synchronous non-stationary responses to climate? *Progress in Oceanography* 175, pp.161-170
- 17) (\*) Barnes CL, Beaudreau AH, Hunsicker ME, Ciannelli L (2018) Assessing the potential for competition between Pacific Halibut (*Hippoglossus stenolepis*) and Arrowtooth Flounder (*Atheresthes stomias*) in the Gulf of Alaska. *PLOS ONE* 13(12)
- 18) Litzow M, Ciannelli L, Puerta P, Wettstein J, Rykaczewski RR, Opiekun M (2018) Non-stationary climate-salmon relationship in the Gulf of Alaska. *Proceedings of the Royal Society of London B*
- 19) (\*) Fall J, Ciannelli L, Skaret G, Johannesen E (2018) Seasonal dynamics of spatial distributions and overlap between Northeast Arctic cod (*Gadus morhua*) and capelin (*Mallotus villosus*) in the Barents Sea. *PLOS ONE* 13(10) | <https://doi.org/10.1371/journal.pone.0205921>
- 20) McClatchie S., Gao J, Drenkard EJ, Thompson AR, Watson W, Ciannelli L, Bograd SJ, Thorson JT (2018) Interannual and secular variability of larvae of mesopelagic and forage fishes in the Southern California Current System. *Journal of Geophysical Research: Ocean*. <https://doi.org/10.1029/2018JC014011>
- 21) \* Puerta P, Johnson B, Ciannelli L, Helser TE, Lauth RR (2018) Sub-sampling populations with spatially structured traits: a field comparison of stratified and random strategies *Canadian Journal of Fisheries and Aquatic Sciences*. <https://doi.org/10.1139/cjfas-2017-0248>
- 22) \* Koenker BL, Laurel BJ, Copeman LA, Ciannelli L (2018) Effects of temperature and food availability on the survival and growth of larval Arctic cod (*Boreogadus saida*) and walleye pollock (*Gadus chalcogrammus*) *ICES Journal of Marine Science*. doi:10.1093/icesjms/fsy062
- 23) Porter SM, Ciannelli L (2018) Effect of temperature on Flathead Sole (*Hippoglossoides elassodon*) spawning in the southeastern Bering Sea during warm and cold years. *Journal of Sea Research* 141: 26-36
- 24) \* Sobocinski KL, Ciannelli L, Wakefield WW, Yergey ME, Johnson-Colegrove A (2018) Distribution and Abundance of Juvenile Demersal Fishes in Relation to Summer Hypoxia and Other Environmental Variables in Coastal Oregon, USA. *Estuarine, Coastal and Shelf Science* 205: 75-90
- 25) \* Barcelo C, Brodeur R, Ciannelli L (2018) Pelagic marine refugia and climatically sensitive areas in an eastern boundary current upwelling system *Global Change Biology* 24: 668-680
- 26) Essington TE, Ciannelli L, Heppell SS, Levin PS, McClanahan TR, Micheli F, Plaganyi EE, van Putten IE (2017) Empiricism and Modeling for Marine Fisheries: Advancing an Interdisciplinary Science. *Ecosystems* 20(20) 237-244
- 27) Reglero P, Santos M, Balbin R, Laiz-Carrión R, Alvarez-Berastegui D, Ciannelli L, Jimenez E, Alemany, F. (2017) Environmental and biological characteristics of Atlantic bluefin tuna and albacore spawning habitats based on their egg distributions. *Deep-Sea Research Part II-Topical Studies in Oceanography* 140: 105-116

- 28) Keller AA, Ciannelli L, Wakefield WW, Simon V, Barth J, Pierce SD (2017) Species-specific responses of demersal fishes to near-bottom oxygen levels within the California Current large marine ecosystem. *Marine Ecology Progress Series* 568: 151-173
- 29) Langangen O, Ottersen Geir, Ciannelli L, et al. (2016) Reproductive strategy of a migratory fish stock: implications of spatial variations in natural mortality. *Canadian Journal of Fisheries and Aquatic Sciences* 73(12): 1742-1749
- 30) Alvarez-Berastegui D, Hidalgo M, Tugores MP, Reglero P, Aparicio-Gonzalez A, Ciannelli L, et al. (2016) Pelagic seascape ecology for operational fisheries oceanography: modelling and predicting spawning distribution of Atlantic bluefin tuna in Western Mediterranean ICES *Journal of Marine Science* 73(7): 1851-1862
- 31) \* Vestfals C, Ciannelli L, Hoff GR (2016) Changes in habitat utilization of slope-spawning flatfish across a bathymetric gradient ICES *Journal of Marine Science* 73(7): 1875-1889
- 32) \* Puerta P, Hunsicker M, Hidalgo M, Reglero P, Ciannelli L, et al. (2016) Community-environment interactions explain octopus-catshark spatial overlap ICES *Journal of Marine Science* 73(7): 1901-1911
- 33) \* Sohn D, Ciannelli L, Duffy-Anderson J (2016). Distribution of early life Pacific halibut and comparison with Greenland halibut in the eastern Bering Sea. *Journal of Sea Research* 107: 31-42
- 34) \* Barcelo C, Ciannelli L, Olsen EM, Johannessen T, Knutsen H. (2016) Eight decades of fish sampling reveal a contemporary novel fish assemblage along the Skagerrak coast of Norway. *Global Change Biology* 22(3): 1155-1167
- 35) \* Johnson-Colegrove A, Ciannelli L, Brodeur R (2015) Ichthyoplankton distribution and abundance in relation to nearshore dissolved oxygen levels within the Northern California Current system. *Fisheries Oceanography* 24(6): 495-507
- 36) Longo C., Hornborg S, Bartolino V, Tomczak MT, Ciannelli L, et al. (2015) Role of trophic models and indicators in current marine fisheries management *Marine Ecology Progress Series* 538: 257-272
- 37) Freitas C, Olsen EM, Moland E, Ciannelli L, Knutsen H (2015) Behavioral responses of Atlantic cod to sea temperature changes. *Ecology and Evolution* 5(10): 2070–2083
- 38) Keller AA, Ciannelli L, Waldo WW, Simon V, Barth JA, Pierce SD (2015) Occurrence of demersal fishes in relation to near-bottom oxygen levels within the California Current large marine ecosystem. *Fisheries Oceanography* 24:2, 162–176
- 39) Ciannelli L, Bailey K, Olsen EM. (2015) Ecological and evolutionary constraints of fish spawning habitats. *ICES Journal of Marine Science* 72(2), 285–296
- 40) Álvarez-Berastegui D, Ciannelli L, Aparicio A, Reglero P, Hidalgo M, Alemany F (2014) Spatial scale, means and gradients of hydrographic variables define pelagic seascapes of bluefin and bullet tuna spawning distribution. *PLoS ONE* 9(10): e109338. doi:10.1371/journal.pone.0109338
- 41) Ciannelli L, Hunsicker M, Beaudreau A, Bailey K, Crowder L, Finley C, Webb C, Reynolds J, Sagmiller K, Anderies JM, Hawthorne D, Parrish J, Heppell S, Conway F, Chigbu P (2014) Transdisciplinary graduate education in marine resource science and management. *ICES Journal of Marine Science* 71(5): 1047-1051
- 42) \* Chen K, Ciannelli L, Decker MB, Ladd C, Cheng W, Zhou Z, Chan KS (2014) Reconstructing source-sink dynamics in a population with a pelagic dispersal phase. *PLOS One* 9(5) e5316
- 43) \* Neidetcher SK, Hurst TP, Ciannelli L, Logerwell EA (2014) Spawning phenology and geography of Bering Sea Pacific cod (*Gadus macrocephalus*). *Deep Sea Research II* Deep Sea Research II 109: 204–214
- 44) \* Vestfals C, Ciannelli L, Duffy-Anderson J, Ladd C (2014) Effects of seasonal and interannual variability in along-shelf and cross-shelf transport on groundfish recruitment in the eastern Bering Sea. *Deep Sea Research II* 109: 204–214

- 45) \* Phillips J, Ciannelli L, Brodeur R, Percy W, Childers J. (2014) Spatio-temporal associations of albacore tuna catches in the Northeasters Pacific with regional and climate environmental variables. *ICES Journal of Marine Sciences* 71(7): 1717-1727
- 46) Decker MB, Liu H, Ciannelli L, Ladd C, Cheng W, Chan KS (2013) Linking changes in the eastern Bering Sea jellyfish populations to environmental factors via nonlinear time series models. *Marine Ecology Progress Series* 494: 179-189
- 47) \* Hunsicker M, Ciannelli L, Bailey KM, Zador S, Stige LC (2013). Climate and demography dictate the strength of predator-prey overlap in a subarctic marine ecosystem. *PLOS One* 8(6) e66025. doi:10.1371/journal.pone.0066025.
- 48) Muhling BA, Reglero P, Ciannelli L, Alvarex-Berastegui D, Alemany F, Lamkin JT, Roffer MA (2013). A comparison between environmental characteristics of larval bluefin tuna (*Thunnus thynnus*) habitat in the Gulf of Mexico and western Mediterranean Sea. *Marine Ecology Progress Series* 486: 257-276
- 49) Durant JM, Hidalgo M, Rouyer T, Hjermann DØ, Ciannelli L, Eikeset AM, Yaragina NA, Stenseth NC. (2013) Population growth across heterogeneous environments: effects of harvesting and age structure. *Marine Ecology Progress Series* 480: 277-287
- 50) Ciannelli L, Fisher JAD, Skern-Mauritzen M, Hunsicker ME, Hidalgo M, Frank KT, Bailey KM. (2013) Theory, consequences and evidence of eroding population spatial structure in harvested marine fishes. *Marine Ecology Progress Series* 480: 227-243
- 51) Duffy-Anderson J, Blood DM, Cheng W, Ciannelli L, Matarese AC, Sohn D, Vance TC, Vestfals C (2013) Combining field observations and modeling approaches to examine Greenland halibut (*Reinhardtus hippoglossoides*) early life ecology in the southeastern Bering Sea. *Journal of Sea Research* 75: 96-109
- 52) Reglero P, Ciannelli L, Alvarez-Berastegui D, Balbin R, Lopez-Jurado JL, Alemany F (2012) Geographically and environmentally driven spawning distributions of tuna species in the western Mediterranean Sea. *Marine Ecology Progress Series* 463: 273-284
- 53) Ciannelli L, Bartolino V, Chan KS (2012) Nonadditive and nonstationary properties in the spatial distribution of a large marine fish population. *Proceeding Royal Society London B* 279: 3635-3642
- 54) \* Bachelier NM, Ciannelli L, Bailey KM, Bartolino V (2012) Do walleye pollock exhibit flexibility in where or when they spawn based on the variability of water temperature? *Deep Sea Research II* 65-70: 208-216
- 55) Hidalgo M, Rouyer T, Bartolino V, Cervino S, Ciannelli L, Massuti E, Jadaud A, Saborido-Rey F, Durant JM, Santurtun M, Pinero C, Stenseth NC (2012) Context-dependent interplays between truncated demographies and climate variation shape the population growth rate of a harvested species. *Ecography* 35(7): 637-649
- 56) \* Bartolino V, Ciannelli L, Spencer P, Wilderbauer T, Chan KS (2012) Scale-dependent depletion of natural populations. *Marine Ecology Progress Series* 444: 251-272
- 57) \* Chen K, Chan KS, Bailey KM, Ciannelli L, Aydin K (2012) A probabilistic cellular automata approach for predator-prey interactions of arrowtooth flounder (*Atheresthes stomias*) and walleye pollock (*Theragra chalcogramma*) in the eastern Bering Sea. *Canadian Journal of Fisheries and Aquatic Sciences* 69(2): 259-272
- 58) \* Hunsicker, M, Ciannelli L, Bailey KM, Buckel J, White W., Link J, Essington T, Gaichas S, Anderson T, Brodeur RD, Chan, KS, Chen K, Englund G, Frank K, Freitas V, Hixon M, Hurst T, Johnson D, Kitchell J, Reese D, Rose G, Sjodin H, Sydeman W, van der Veer H, Vollset K, Zador, S (2011) Functional responses and scaling in marine predator-prey interactions: contemporary issues and emerging concepts *Ecology Letters* 14(12): 1288-1299
- 59) Auth TD, Brodeur RD, Soulen HL, Ciannelli L, and Peterson WT (2011) The response of fish larvae to decadal changes in environmental forcing factors off the Oregon coast. *Fisheries Oceanography* 20(4): 314-328

- 60) Laurel B, Hurst T, Ciannelli L (2011) An experimental examination of temperature interactions in the 'match-mismatch' hypothesis for Pacific cod larvae. *Canadian Journal of Fisheries and Aquatic Sciences* 68(1), 51-61.
- 61) \* Bartolino V, Ciannelli L, Bacheler NM, Chan KS (2011) Ontogeny and sex disentangle density-dependent and density-independent spatiotemporal dynamics of a marine fish population *Ecology* 92(1): 189-200
- 62) \* Liu H, Ciannelli L, Decker MB, Ladd C, Chan KS (2011) Nonparametric threshold model of zero-inflated spatio-temporal data with application to shift in jellyfish distribution. *Journal of Agricultural, Biological and Environmental Statistics* 16(2): 185-201

### **Book Chapters:**

1. Conway F, Ciannelli L (In press). Wild capture of fisheries: Processes, Technology, and Solutions. In *Ocean and Society: An Introduction to Marine Studies*, edited by Ana K. Spalding and Daniel O. Suman. Taylor & Francis/Routledge, 711 Third Avenue, New York, NY 10017
2. Brander K, Botsford L, Ciannelli L, Fogarty M, Heath M, Planque B, Shannon L, Wieland K (2010) Human impacts on marine ecosystems. In: Barange M, Field JG, Harris RP, Hofmann EE, Perry IR, Werner F (Eds) 'Marine ecosystems and global change'. Oxford, Biology
3. Ciannelli L., Hjermmann D.Ø., Lehodey P., Ottersen G., Duffy-Anderson J.T. and N.C. Stenseth. (2005) Climate forcing, food web structure and community dynamics in pelagic marine ecosystems. Invited chapter in: 'Aquatic Food Webs: an ecosystem approach'. Belgrano A., Scharler U., Dunne J., and R. Ulanowicz (Editors). Oxford University Press. Pp 143-169.