



## **CURRICULUM VITAE SILVIA CASINI**

### **PERSONAL DATA**

**Name and surname:** Silvia Casini

**Date and place of birth:** 12 July 1967, Siena, Italy

**Nationality:** Italian

**Known languages:** Italian (mother tongue), English (advanced), French (intermediate), Spanish (intermediate), Portuguese (elementary).

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### **EDUCATION**

**July 1986:** Scientific High School Diploma, Liceo Scientifico "G. Galilei" Siena - ITALY

**8 March 1991:** Degree in Biological Sciences, Department of Environmental Biology - University of Siena, Mark: 110/110 cum laude

**May 1992:** Qualification to the profession of biologist.

**June 26, 1997:** University of Siena, PhD in Environmental Biology, IX ° cycle Thesis title: "Alteration of porphyrin metabolism as a biomarker of exposure to environmental contaminants: development of non-destructive methodologies"

### **ACADEMIC CAREER**

**November 1993 - October 1996** - PhD student in Environmental Biology - University of Siena.

**December 1997 - January 1999** - CoNISMa postdoctoral fellowship at the Department of Environmental Biology - University of Siena.

**February 1999 - January 2003** Research fellow at the Department of Environmental Sciences - University of Siena.

**July 2003 - December 2004** Fixed-term employment relationship of category D in the technical, technical-scientific and data processing area lasting 1 year. Biomarkers Laboratory of the Department of Environmental Sciences "G. Sarfatti", University of Siena.

**2005-2007** Researcher SSD BIO 07 Ecology, at the Department of Environmental Sciences "G. Sarfatti" - University of Siena.

**2006-2012** member (as Secretary) of the Didactics Committee of the Master's Degree Course in Techniques of Environmental Monitoring and Recovery and of the Master's Degree Course in Monitoring and Management of the Marine Environment.

**2007-2011** Member of the board of the PhD COURSE IN ENVIRONMENTAL SCIENCES AND TECHNOLOGIES, University of Siena

**2008- 2021** confirmed Researcher in Ecology SSD BIO 07, at the Department of Physical Earth and Environmental Sciences, (former Department of Environmental Sciences "G. Sarfatti") - University of Siena.

**2011- 2014** Member of the board of the PhD course IN EARTH, ENVIRONMENTAL AND POLAR SCIENCES, University of Siena

**2013-2017** member of the Committee for Teaching of the Degree Courses in Environmental and Natural Sciences, Department of Physical, Earth and Environmental Sciences.

**2015-2020** Member (with delegation from the Rector of the University of Siena) of the Scientific Committee and Board of Directors of the Consortium for the Interuniversity Center of Marine Biology and Applied Ecology "G. Bacci" (CIBM) of Livorno.

**2018:** Achievement of National Scientific Qualification for Associated Professor in the Competition Sector 05 / C1 "Ecology" from 08 October 2018 - 08 October 2024.

**Since 2018** Chair of the Committee for Teaching Degree Courses in Environmental and Natural Sciences (Bachelor's Degree in Environmental and Natural Sciences and Master's Degree in Ecotoxicology and Environmental Sustainability), Department of Physical, Earth and Environmental Sciences.

**Since 2018-2021** Coordinator of teaching activities for the Department of Physical, Earth and the Environmental Sciences, University of Siena.

**Since 2021-2023** President of the Society of Environmental Toxicology and Chemistry (SETAC) Italian Language Branch

**Since the 1st of June 2021** Associate Professor in Ecology SSD BIO 07, Department of Physical, Earth and the Environmental Sciences, University of Siena.

## **RESEARCH PROFILE**

Silvia Casini was born in Siena (Italy) in 1967. Currently she is Associate Professor in Ecology - SSD BIO / 07 at the University of Siena and since 2010. She is scientific director, together with M. Cristina Fossi, of the "Laboratory of Biomarkers and Impact of Plastics" at the same University (Department of Physical of the Earth and the Environmental Sciences). She graduated with honors in Biology in 1991 and obtained the PhD in Environmental Biology in 1997 at the University of Siena. Her research activity was essentially focused on studying the responses of organisms and natural populations to anthropogenic alterations related to the

release of synthetic or natural pollutants into the environment, also with a view to sustainable management of ecosystems. From the beginning and throughout her career she had a strong predisposition for the internationalization of research and teaching, as evidenced by the numerous experiences at universities and European and extra-European research institutions, by the numerous international collaborations and by the production of collaborative scientific work. In particular, she has spent training periods at the laboratories of Dr. Colin Walker and Prof. Michael Depledge, both of whom are considered to be founding figures in biomarker-based ecotoxicological studies. Starting from the research related to the degree thesis (1990) she focused her attention on the study of the effects of pollution on species "at risk" (in particular reptiles, birds and marine mammals) developing a series of innovative diagnostic tools (non destructive biomarkers) for the evaluation of the ecotoxicological health status. She has conducted the first international research on the development and validation of the use of porphyrins as a non-destructive biomarker of exposure to liposoluble compounds and heavy metals. Since the 2000s, she has focused in particular on the development of an integrated non-destructive methodology for the ecotoxicological study of sea turtles, assuming a leading role on the international scene.

As part of the study of anthropogenic alterations in the marine environment, in 2001 she published the first works on the effects of endocrine disruptors in terminal predators of the Mediterranean (large pelagic fish and cetaceans). From 1998 to 2007 she contributed with a leading role to the first research at the Mediterranean level on the use of biomarkers for the assessment of the ecotoxicological risk associated with on-shore and off-shore oil and gas extraction activities.

Since 2012 she directs the research group of the DSFTA-University of Siena in: **SUSTAINABLE AGRICULTURE**. The activities of this research group are focused on the application of an ecotoxicological approach to assess the environmental impact of agricultural practices. One of the main purposes is the development of monitoring protocols and interpretative models of the levels of ecotoxicological risk for the natural populations of rural areas. Specific research in progress:

a) EVALUATION OF THE SUB-LETHAL EFFECTS OF ENVIRONMENTAL CONTAMINANTS ON *APIS MELLIFERA* AND OTHER INSECTS POLLINATORS. This research line is aimed at evaluating the sub-lethal effects of contaminants of agricultural and urban origin on bees, through an approach based on biomarkers able to provide information on the potential alterations of different physiological pathways, such as: neurotoxicity, biotransformation systems, oxidative stress, DNA damage, immune system impairments, cellular stress. Laboratory studies are carried out to develop biomarkers for the evaluation of the toxicological effects of commercial pesticides (fungicides, herbicides, insecticides) and other anthropogenic contaminants, individually and in combination. Field ecotoxicological monitoring of honeybees are also carried out and an integrated biological index (IBR) was developed to describe the toxicological health status of honeybees. On this topic Silvia Casini and her team are collaborating with "Science for Environment Policy", a service published by the European Commission's Environment Directorate-General. Collaboration on pollinators is also carried out with LEGAMBIENTE Onlus, some of the outcomes of the collaboration were the contribution of the research group in sustainable agriculture in the volume "Agroecologia circolare" and in the Dossier "Stop pesticides".

b) Assessment of the potential toxicological risk related to the disposal of the by-products of olive oil production (vegetation water and wet pomace) on soil and freshwater organisms with a view to bio-remediate and reuse these by-products in agroecosystems;

c) Evaluation of the presence of chemical contaminants and biotoxins in short chain products.

d) Toxicological effects of fungicides and other pesticides on non-target soil organisms. This line of research aims to evaluate the potential toxic effects of the various fungicides used in agriculture on non-target soil species (e.g. *Eisenia fetida*).

e) Non-invasive ecotoxicological investigations on avian species.

Since 2013 she has participated in research on the impact of the "Marine Litter" at an international level. She has a leading role in supporting the coordination of the "Plastic Busters" project, flagship of the Sustainable Development Solution Network (SDSN) Mediterranean. The project (involving 15 Mediterranean Partners), devoted to monitoring and mitigating the impact of plastics in the Mediterranean, was labelled in February 2016 by the 43 member states of Union for the Mediterranean (UfM). It provides strategic support for the coordination of the Interreg Med "Plastic Busters MPAs" project and the ENI CBC "Common" project, where the Plastic Buster strategy is applied in specific contexts in the north and south of the Mediterranean. She participated as author in the working group and in the drafting of the protocol "Bioindicator selection in the strategies for monitoring marine litter in the Mediterranean sea" published by Union for Mediterranean and by the German Agency for International Cooperation (GIZ).

During her scientific activity she showed an excellent predisposition to work in a team also with the role of coordinator. She has coordinated and still coordinates several research groups and research projects at national and international level. She is president of the SETAC Italian Language Branch.

She participated as an Expert in the UNEP MAP Regional Stakeholders Consultation Meeting to contribute to the preparation of the Ministerial Declaration of COP 21. She was a panellist at UNEP / MAP: Integrated Meetings of the Ecosystem Approach CORMONs. She participates as an expert in the Union for Mediterranean Environment Task Force and is a Member of the Mediterranean Biodiversity Protection Community (MBPC).

She participated in 74 International and National Conferences, 44 of which with the role of speaker or invited speaker. She organized 15 International and National Conferences. She participated in 34 research expeditions in various areas of the Mediterranean, Chile and Argentina.

The scientific production deriving from the research activities of Prof. Silvia Casini consists of a total of 380 original publications: 120 articles in scientific journals, of which 102 with IF, 12 monographs or book chapters, 28 abstracts in journals with IF, 33 contributions in conference proceedings, 218 abstracts, mostly at international conferences, presented as communications or posters. She has a SCOPUS H index of 29 with 1948 citations. H index Google Scholar of 32 with 3072 citations. She is editor of the journal: *International Journal of Environmental Research and Public Health*.

## **TEACHING EXPERIENCE AND MANAGEMENT OF DIDACTIC ACTIVITIES**

Silvia Casini has carried out teaching activities in the SSD BIO07 – ECOLOGY and ECOTOXICOLOGY continuously starting from 2001 until today for the degree courses that have occurred over time at the Faculty of Mathematical, Physical and Natural Sciences of the University of Siena first and at the Department of Sciences Physics of the Earth and the Environment after and still at present. Since 2005 she has been supervisor of 44 experimental degree theses, and co-supervisor of 20 theses. She was Tutor of PhD theses, research grants and Post Doc grants.

Since 2006 she participated with leading roles in activities related to the organization of teaching, first as a member and secretary of committees for teaching, then as Committee Chair, also contributing to the drafting of regulations for new degree courses. Since 2013 she has been in charge of the Quality Assurance for the courses SaeN and ESA.

**Teaching activities in the academic years 2016-2025:**

- “Biological effects of pollutants” (6 CFU 60 hours) of the Course in Environmental and Natural Sciences - SAeN.
- “Quality and safety of agri-food production” (2 CFU 16 hours) of the Master's Degree Course in Ecotoxicology and Environmental Sustainability - ESA.
- “Management of marine environment resources” (6 CFU 56 hours) of the Master's Degree Course in Ecotoxicology and Environmental Sustainability - ESA.
- “Ecology” (1 CFU 10 hours) of the Course in PREVENTION TECHNIQUES IN THE ENVIRONMENT AND IN THE WORKPLACE.

Invited lecturer:

- AY 2017-2018, 2018-2019, 2019-20: Invited lecturer in the course of "Bioethics and Animals Experiments", Biochemistry Degree Faculty of Veterinary Medicine, University of Caceres, Spain on the following topics: Effects of pesticides to nontarget terrestrial species, Non-destructive biomarkers in endangered species, In vitro testing for environmentally relevant chemical compounds.
- AY 2020-21, 2021-2022: invited lecturer with a lecture entitled “Interactions between proteins and environmental contaminants” in the course of “Protein biochemistry”, in the Master of Science in Biological Chemistry, University of Stavanger, Norway.