

# CHRISTOFOROS A. KAPOPOULOS

aquaterra.gr

Civil Engineer • Geologist • Coastal & Geotechnical Consultant

Founder & Managing Director, Ch. Kapopoulos & Associates Co. (AquaTerra) | Patras, Greece

PATENT OBI 1008536  
Soft Shore Protection | 2014-2034

35+

Years Practice

500+

Field Investigations

180+

Geo/Hydro Surveys

120+

Geophysical Works

60+

Geotech. Studies

30+

Coastal Projects

300+

Coastal Simulations

30+

EIA / Permitting

## CONTACT & WEB

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Patras, Greece | Study Office No. 9166

## EDUCATION

### M.Sc. Infrastructure Engineering

Univ. of Patras | 2004 | 8.35/10 | Thesis 10/10

### Diploma in Civil Engineering

Democritus Univ. of Thrace | 2001 | 2nd in class

### B.Sc. in Geology

Univ. of Patras | 1988 | IKY Scholarship

## REGISTERED STUDY CATEGORIES

Cat. 11 - Port & Coastal Works

Cat. 20 - Geological / Hydrogeological

Cat. 21 - Geotechnical Investigations

Cat. 27 - Environmental Studies

Cat. A - 01, 02, 06, 08, 10, 13, 16

## CERTIFICATIONS

Shoreline Management (DHI, 2017)

ICZM, UNESCO-IHE Delft (2007)

Python Programming (mathesis, 2019)

## LANGUAGES

Greek - Native

English - Professional

## SOFTWARE & TOOLS

### Coastal / Hydraulic

Aphrodite3D

Delft3D

SWAN

HEC-RAS

### Geotechnical

PLAXIS

Slope/W

### GIS / Visualisation

ArcGIS

ParaView

### Geophysics

Geosoft

SeisView

Res2DInv

ABEM

### Programming

Python

Fortran

C/C++

C#

## PROFESSIONAL PROFILE

Senior civil engineer and geologist with more than **three decades** of professional practice across coastal engineering, soft shore protection, geotechnical investigation, hydrogeology, geophysics, hydraulic studies and environmental permitting. Work combines field investigation, numerical simulation, patent-based coastal protection design and applied climate-resilience planning for public and private-sector infrastructure across Greece, with selected international collaborations.

- Principal of a registered Greek public-works study office active in coastal engineering, geology/hydrogeology/geophysics, geotechnical investigations and environmental studies.
- Specialised in soft shore protection, coastal erosion control, hydrodynamic and morphodynamic simulation, and fit-for-purpose digital tools for shoreline and seabed analysis.
- Leads AquaTerra's technical work on patented submerged reef arrangements, beach nourishment concepts, coastal vulnerability assessment, and climate-resilient infrastructure design.
- Holder of Greek patent **OBI No. 1008536** for innovative soft shore protection using submerged reef structures (2014-2034), with applied implementations across multiple Mediterranean sites.

## CAREER TIMELINE

	Milestone
1987	Founded GEO.ME O.E., initiating professional practice in geological, hydrogeological, geophysical, environmental and geotechnical studies across Greece.
1988-96	Extensive field investigations: water-supply hydrogeology, geophysical prospecting, landslide diagnosis, archaeological prospecting (NATO / British Archaeological School, University of Leeds) and hydropower works with the Greek Public Power Corporation.
1992-96	Early experimental soft shore protection installations at Theologos (Rhodes, 1992) and Alexandra Beach / Poto (Thassos, 1996) with the University of Patras.
1994-00	Geophysical and engineering-environmental work on the Athens Metro through the French-German consortium (CJV) and Apion Kleos consortium (Vinci, Aktor, Hochtief).
2001-04	M.Sc. in Infrastructure Engineering, University of Patras - thesis grade 10/10; graduated with 8.35/10.
2007-12	Coastal erosion protection designs and EIA across Oitylo Bay (Mani), Nea Makri (Attica, 2.5 km shoreline), Kremasti (Rhodes) and Kos Island.
2010-now	Expanded use of Aphrodite3D in-house platform for high-resolution coastal morphology, shoreline evolution and structure-interaction analysis.
2013	Invited speaker to the Environmental Committee of the Hellenic Parliament on coastal erosion; keynote at COMPSUD (Mediterranean Parliamentarians).
2014	Patent issued: OBI No. 1008536 - innovative soft coastal protection using submerged reef arrangements (valid 2014-2034).
2016-19	Major coastal protection studies at Kalamaki, Valimitika, Bozaitika and Tsoukaleika; conference papers at CEST 2017, MEDCOAST 2018 and DMPCO 2019.
2020-22	Infrastructure, geotechnical and environmental assignments: Rio-Aktaio study, Coca-Cola 3E EIA, Stylou Street landslide response, Agios Nikolaos coastal protection.
2022-now	Knowledge-partner role at Regional Growth Conference (University of Patras) on Nature-based Solutions; ongoing simulation and project pipeline.

## SELECTED COASTAL PROJECTS

## PROFESSIONAL MEMBERSHIPS

Technical Chamber of Greece (TEE)  
 Geotechnical Chamber (GEOTEE)  
 Assoc. of Greek Geologists (SEG)  
 Assoc. of Greek Civil Engineers (SPME)  
 Env. Committee, TCG Western Greece  
 Division (2008-2014)  
 Board Member / Secretary, Study  
 Consultants of Achaia

## NGO &amp; SCIENTIFIC ROLES

SaveCoast NGO - Scientific Committee  
 Beach Recovery Foundation, USA  
 Scientific Committee  
 European Inst. of Law, Science &  
 Technology (EILST) - Sci. Collab.  
 Pelagos / Greek Hub for Renewable  
 Energy (Interreg Mediterranean)  
 Eco-NautiNET blue-energy network

## KEY COLLABORATIONS

Hellenic Centre for Marine Research  
 (HCMR) / Pelagos Interreg Med.  
 City of Long Beach, California, USA  
 University of Patras - Mechanics  
 Laboratory (~12 years)  
 British Archaeological School &  
 University of Leeds (NATO)  
 Greek Public Power Corporation  
 Hydropower Works Dept.  
 French-German CJV / Apion Kleos  
 Athens Metro consortium  
 Coca-Cola Hellas, Lidl Hellas  
 Greek municipalities & regional  
 authorities

Project	Period	Scope
<b>Rio-Agios Vasileios coastal zone</b>	<b>2021</b>	Protection and restoration of coastal zone; operational upgrading of Rio-Aktaio roads including geotechnical, coastal and environmental components.
<b>Bozaitika shore, Patras</b>	<b>2018-2019</b>	Soft shore protection and nourishment design supported by hydrodynamic and morphodynamic modelling.
<b>Kalamaki beach, Western Achaia</b>	<b>2016-2017</b>	Design of soft shore protection and nourishment for erosion control; EIA and permitting.
<b>Valimitika beach, Aigio/Egion</b>	<b>2014-2015</b>	Soft shore protection arrangement and nourishment scheme for beach stabilisation.
<b>Mola Kaliva &amp; Poseidi, Chalkidiki</b>	<b>2012-2014</b>	Erosion-control design, hydrodynamic assessment and environmental permitting.
<b>Kremasti beach, Rhodes</b>	<b>2009-2012</b>	Soft protection and nourishment studies with hydrodynamic and sediment transport evaluation.
<b>Kos Island - V. Georgiou &amp; Occidental</b>	<b>2009-2017</b>	Coastal protection and modelling for V. Georgiou waterfront and hotel frontage; EIA/permitting; geotechnical investigation for wave-breaking infrastructure.
<b>Nea Makri, Attica</b>	<b>2010-2011</b>	Soft shore protection and nourishment scheme covering a 2.5 km shoreline.
<b>Oitylo Bay, Laconia / Mani</b>	<b>2007</b>	Soft shore protection arrangement with the University of Patras Mechanics Laboratory; design basis for subsequent Thassos and Rhodes applications.

## RECENT INFRASTRUCTURE, GEOTECHNICAL &amp; ENVIRONMENTAL WORK

- Operational upgrading study for the coastal roads of Rio and Aktaio, Region of Western Greece (2021) - geotechnical, coastal and environmental components.
- Geotechnical investigation for a municipal property on Sroginis Street, Rio, Patras (2021).
- Strategic Environmental Assessment for the urban plan of therapeutic centre 'Merimna' (2020).
- Slope-failure/landslide response study on Styliou Street, Municipality of Patras (2020).
- Environmental impact study for Coca-Cola 3E - new activity and water-abstraction capacity (2020).
- Roman Bath retaining-wall update at the Krynaio building complex (2022).
- Agios Nikolaos coastal protection and vulnerability-oriented study (2022).
- Sympolitia Street, Patras - geotechnical investigation and slope-stability assessment (2019).
- V. Georgiou coastal infrastructure, Kos - geotechnical investigation and wave-breaking assessment (2017).

## EARLY CAREER &amp; LONG-HORIZON EXPERIENCE

- Hydrogeological and geophysical survey, Pelagos aquaculture unit, Fokianos Bay, Eastern Peloponnese (1988).
- Archaeological geophysical prospecting with British Archaeological School & University of Leeds under NATO / Science for Stability (1989-1990); co-author, Canal of Xerxes paper, *Archaeological Prospection*, 2000.
- Early experimental soft shore protection: Theologos, Rhodes (1992) and Alexandra Beach / Poto, Thassos (1996).
- Hydropower and dam-foundation geo-investigations with the Greek Public Power Corporation / Hydropower Works Department (1992-1996).
- Athens Metro geophysical and engineering-environmental work through the French-German CJV consortium and Apion Kleos consortium (Vinci, Aktor, J&P Avax, Hochtief) - multiple geophysical studies

## AQUATERRA

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Patras, Greece

35+ years of professional practice in coastal engineering, geotechnical investigation, geosciences and environmental permitting across Greece.

presented at Orlando, 1995.

## IN-HOUSE INNOVATION & DIGITAL CAPABILITY

- **Aphrodite3D:** proprietary 2D/3D coastal simulation platform for hydrodynamic, hydraulic and morphodynamic applications, with visualisation workflows for shoreline, seabed and coastal structures - under continuous development since 2010.
- **Patent OBI No. 1008536:** innovative soft shore protection using submerged reef structures, issued 2014, valid through 2034.
- **Programming stack:** Fortran, C/C++, C#, Python - using Microsoft Visual Studio, Intel Visual Fortran and PGI/NVIDIA Visual Fortran environments.
- **Commercial tool suite:** Delft3D, SWAN, PLAXIS, Slope/W, HEC-RAS, ArcGIS, Matlab, ParaView, Geosoft, SeisView, Res2DInv.

## PUBLICATIONS, CONFERENCE PAPERS & INVITED TALKS

- 2022** - Knowledge Partner, Regional Growth Conference - Nature-based Solutions, University of Patras.
- 2019** - Kapopoulos Ch. & Karathanasi F. Evaluation of impacts in coastal morphology induced by different coastal structures using high-resolution coastal simulation software. *1st Int. Conf. on Design and Management of Port, Coastal and Offshore Works (DMPCO)*, Athens.
- 2018** - Kapopoulos Ch. High-resolution simulations to evaluate local coastal morphology changes induced by coastal structures. *12th Panhellenic Symposium of Oceanography & Fisheries*, Corfu.
- 2018** - Kapopoulos Ch. & Georgakopoulos P. Coastal Zone of Achaia: Scientific Approach and Perspectives. *SAVECOAST / Western Achaia Municipality*, Patras.
- 2017** - Kapopoulos Ch. Application of Aphrodite3D Coastal Simulation Software to Evaluate Sediment Transport near Structures. *CEST 2017*, Rhodes.
- 2013** - Kapopoulos Ch. Professional experience in coastal erosion. Invited presentation to the Environmental Committee of the Hellenic Parliament, Athens.
- 2013** - Kapopoulos Ch. Experience in coastal erosion. *Circle of Mediterranean Parliamentarians for Sustainable Development (COMPSUD)*, Iliia/Pyrgos.
- 2011** - Goudas C., Kapopoulos Ch. & Psarropoulou E. Soft Shore Protection: Evaluation of Experimental Application. *MEDCOAST 2011*, Rhodes.
- 2008** - Goudas C., Kapopoulos Ch. & Psarropoulou E. Soft Shore Protection: Theory and Practice. Chapter in *Integrated Coastal Zone Management - The Global Challenge*, Singapore.
- 2000** - Jones R.E. et al. (incl. Kapopoulos Ch.) Exploration of the Canal of Xerxes, Northern Greece: the role of geophysical and other techniques. *Archaeological Prospection* 7, 147-170.
- 1995** - Papamarinopoulos S.P., Papaioannou M.G., Kapopoulos Ch. & Balatsas I. Multiple geophysical studies in the urban central environment of Athens in connection with the metro's main station. *Symp. on Geophysics to Engineering and Environmental Problems*, Orlando, Florida.

## CORE SERVICE PORTFOLIO

Service Area	Description
<b>Coastal Engineering &amp; Shore Protection</b>	Soft shore protection design, submerged reef arrangements, beach nourishment, coastal vulnerability assessment, shoreline management and climate-adaptation planning.
<b>Hydrodynamic &amp; Morphodynamic Modelling</b>	2D/3D simulation of coastal hydrodynamics, sediment transport, shoreline evolution and seabed response using Aphrodite3D, Delft3D and SWAN.

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<b>Geotechnical Investigations &amp; Studies</b>	Foundation design, slope-stability analysis, landslide diagnosis and mitigation, retaining/earthworks support, bearing-capacity assessment (60+ projects).
<b>Geological &amp; Hydrogeological Surveys</b>	Site characterisation, water-supply and groundwater investigations, drilling supervision, hydropower and dam-foundation geo-investigations (180+ studies).
<b>Geophysical Investigations</b>	Seismic refraction/reflection, geoelectrical resistivity and EM surveys for subsurface stratigraphy, engineering site response and archaeological prospecting (120+ surveys).
<b>Environmental Impact Assessment &amp; Permitting</b>	EIA, Strategic Environmental Assessment and environmental licensing for coastal, infrastructure and geoengineering projects (30+ approvals).
<b>Hydraulic Studies &amp; Flood Management</b>	River and stream hydraulics, flood-risk assessment, HEC-RAS modelling, design of flood-protection and drainage works.
<b>In-House Innovation &amp; Digital Solutions</b>	Aphrodite3D platform development; patent-backed coastal protection design; high-resolution structure-impact simulations for ports, marinas and renewables.