

THE SCHOOL FOR FIELD STUDIES

DIRECTED RESEARCH CROATIA

Center for Conservation of Marine Megafauna · Veli Lošinj. A complete record of student research projects from the four most recent semesters.



SPRING 2026

4 projects · 16 student authors

FALL 2025

6 projects · 24 student authors

SPRING 2025

6 projects · 20 student authors

FALL 2024

5 projects · 15 student authors

21

RESEARCH PROJECTS

75

STUDENT AUTHORS

4

FACULTY ADVISORS

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SEMESTERS

FALL 2024 – SPRING 2026

ABOUT THIS GUIDE

Directed Research is the capstone of every SFS semester: students work in small teams with resident faculty on questions set by the needs of the host community and its ecosystems. This guide collects the Directed Research projects completed at the Center for Conservation of Marine Megafauna in Veli Lošinj, Croatia, over the four most recent semesters.

Projects are listed newest first. Each entry gives the project title, its faculty advisor or advisors, and the student authors with their home institutions. Each entry closes with a research summary drawn from the Center’s semester final report for that project. Where a project’s final paper carries a formal author abstract, that abstract replaces the summary and is labelled as such.

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FACULTY ADVISORS

Directed Research at the Center for Conservation of Marine Megafauna was advised by 4 faculty and researchers across these semesters.

ADVISOR	PROJECTS	SEMESTERS
Dr. Grgur Pleslić	12	All four semesters
Dr. Matic Jančić	5	All four semesters
Dr. Mateja Zekan Lupić	4	All four semesters
Ana Halovanić	1	Spring 2026

Center for Conservation of Marine Megafauna · Veli Lošinj, Croatia

01 **Dolphin-Watching as a Potential Tool for Social Network Description of the Cres-Lošinj Bottlenose Dolphin (*Tursiops truncatus*) Population**

Faculty advisor: Dr. Grgur Pleslić

Allie Baldini¹, Brooke Catich², Morgan Herringshaw³, Sofia Ramirez⁴

¹ Lehigh University, ² University of Colorado Boulder, ³ Villanova University, ⁴ University of San Diego

RESEARCH SUMMARY

Dolphin-watching boats are on the water far more often than research vessels, and this project tested whether their sightings can be used to describe the social network of the Cres-Lošinj bottlenose dolphin population. Photo-identification records gathered from tour operations were analysed for association patterns and set against what the Center's own survey data show. The project was completed successfully with no major difficulties; on the students' suggestion, an introductory lecture on social network analysis will be added for the next cohort.

02 **Diet Composition and Marine Litter Ingestion of Loggerhead Sea Turtles (*Caretta caretta*) in the Northern Adriatic Sea**

Faculty advisors: Ana Halovanić and Dr. Mateja Zekan Lupić

Tamar Greenberg¹, Katie McCormick², Brooklyn Adams¹

¹ University of Colorado Boulder, ² University of Wisconsin–Madison

RESEARCH SUMMARY

This project examined what loggerhead sea turtles in the northern Adriatic are eating, and how much marine litter they take in alongside it, through analysis of gastrointestinal tract contents. Diet and litter analysis are both slow work, and the advisor notes the project needs additional field days to accumulate sufficient data; its design will be adapted according to what the tracts contain. Three students worked on it, and the advisor considers a fourth would benefit the team.

03 **Evaluating the Accuracy of Data Provided by Dolphin Watching Tours in Estimating Abundance of *Tursiops truncatus* When Compared with Research Surveys in the Cres-Lošinj Site of Community Importance**

Faculty advisor: Dr. Grgur Pleslić

Allison E. Culp¹, Madeleine W. Hatfield², Nicholas W. Parlavecchio³, Xitlali P. Pedraza-Payta¹, Jayde E. Waibel⁴

¹ University of San Diego, ² University of New Hampshire, ³ University of Richmond, ⁴ College of the Holy Cross

RESEARCH SUMMARY

The companion to the social network study, this project tested how accurate abundance estimates derived from dolphin-watching tour data are when compared with the Center's dedicated research surveys in the Cres-Lošinj Site of Community Importance. If tour platforms can produce reliable estimates, they extend monitoring effort at no additional survey cost. The project was completed successfully with no major difficulties.

An Index-Based Approach to Identifying Overlapping Areas of Fishery and Loggerhead Sea Turtle (*Caretta caretta*) Locations in the Adriatic Sea

Faculty advisor: Dr. Matic Jančič

Josephine Caton¹, Rebekah Jaksa², Mia Pabalan³, Caley Walsh⁴

¹ Dickinson College, ² Bowdoin College, ³ Hamilton College, ⁴ University of Colorado Boulder

RESEARCH SUMMARY

Satellite-tracked loggerhead positions and fishing effort data were combined into an index identifying where turtles and Adriatic fisheries overlap most heavily — the areas in which bycatch risk concentrates. The approach gives managers a spatial priority rather than a general warning. The advisor reports the project was pitched at an appropriate level with no challenges observed, and satellite tagging of sea turtles continues in Fall 2026.

Center for Conservation of Marine Megafauna · Veli Lošinj, Croatia

01 **Abundance Estimate of Bottlenose Dolphins (*Tursiops truncatus*) in the Cres-Lošinj Site of Community Importance**

Faculty advisor: Dr. Grgur Pleslić

Alina Barreto Cubiña¹, Molly Butts², Anthony Stackle³, Ellie Thomas⁴

¹ Lehigh University, ² Dickinson College, ³ Harvard University, ⁴ University of Washington

RESEARCH SUMMARY

This project produced an abundance estimate for the bottlenose dolphins using the Cres-Lošinj Site of Community Importance, the core measure behind the population's conservation status and the Natura 2000 designation that protects it. Photo-identification data collected on boat-based surveys were analysed with mark-recapture methods. The advisor plans to keep the topic and add a methodological comparison between systematically and opportunistically collected data.

02 **Social Stratification in Kvarnerić Bottlenose Dolphins Based on Sex and Reproductive Status**

Faculty advisor: Dr. Grgur Pleslić

Katie Brown¹, Bailey Carmack², Anna Grez³, Rowan Mulder⁴

¹ University of San Diego, ² Williams College, ³ Scripps College, ⁴ Reed College

RESEARCH SUMMARY

This project asked whether Kvarnerić bottlenose dolphins associate along lines of sex and reproductive status, analysing association patterns among photo-identified individuals of known sex and reproductive history. Structure of this kind shapes how disturbance and mortality propagate through a population. The advisor reports the topic was very well received and the group did excellent work; the next iteration will explore social structure in relation to fisheries.

03 **Trawler Activity and Bathymetry Shape Habitat Use and Behavior of Bottlenose Dolphins (*Tursiops truncatus*) in the Cres-Lošinj Archipelago**

Faculty advisor: Dr. Grgur Pleslić

Stephanie Charbonnier¹, Mariah Davis², Abigail Donovan³, Anna Mazur⁴

¹ Bates College, ² Colorado College, ³ University of San Diego, ⁴ Middlebury College

RESEARCH SUMMARY

Trawlers and seabed depth both shape where dolphins go and what they do there. This project related bottlenose dolphin habitat use and behaviour in the Cres-Lošinj archipelago to trawler activity and bathymetry, separating the pull of foraging opportunity behind trawlers from the underlying depth preference. The advisor plans to keep the topic but shift the method toward ranging patterns across seasons.

04 **Seasonal High-Risk Interaction Areas Between Small and Large Juvenile Loggerheads and Industrial Fisheries in the Adriatic Sea**

Faculty advisor: Dr. Matic Jančić

Sae Ackerstein¹, Julia Norton², Olivia Schreinert³, Ali Wawner⁴

¹ University of California San Diego, ² University of Richmond, ³ University of San Diego, ⁴ Tufts University

RESEARCH SUMMARY

This project mapped where and when small and large juvenile loggerheads overlap with industrial fisheries in the Adriatic, identifying seasonal high-risk interaction areas separately for the two size classes, which use different parts of the sea and meet different gear. The advisor notes the heavy R and GIS demands the project places on students, and may simplify or change it in future semesters.

05 Behavioral Effects of Satellite Tag Attachment on Neonate Loggerhead Sea Turtles

Faculty advisor: Dr. Matic Jančič

Maya Blanchard¹, Siera Leete², Isla McCullough³, Grace Webb⁴

¹ Cornell University, ² University of San Diego, ³ Oberlin College, ⁴ Connecticut College

RESEARCH SUMMARY

Miniature satellite tags could reveal where loggerheads go during the years they otherwise disappear from view, but only if attachment does not alter their behaviour. This project tested the behavioural effects of tag attachment on neonate loggerhead sea turtles. The method tested here will be used to attach miniature tags to neonates in subsequent years, and the turtles are still being monitored to establish how long attachments last. A publication for the *Mediterranean Turtle Bulletin* is planned.

06 Correlating the Health Status and Epibiont and Ectoparasite Loading of Loggerhead Sea Turtles (*Caretta caretta*) in the Adriatic Sea

Faculty advisor: Dr. Mateja Zekan Lupić

Emerson Catlin¹, Ava DiBattista², Skyler Gately³, Gabriella Sabo¹

¹ Scripps College, ² University of Richmond, ³ University of Colorado Boulder

RESEARCH SUMMARY

Barnacles, algae, and parasites accumulate on a turtle's shell and skin, and heavy loads are often read as a sign of poor condition. This project tested that relationship directly, correlating epibiont and ectoparasite loading with the health status of loggerhead sea turtles in the Adriatic. The advisor intends to keep the objective and pursue a larger sample spanning more size classes and health statuses in order to establish the correlation firmly.

Center for Conservation of Marine Megafauna · Veli Lošinj, Croatia

01 Common Bottlenose Dolphin (*Tursiops truncatus*) Abundance within the Cres-Lošinj Archipelago

Faculty advisor: Dr. Grgur Pleslić

Hope Angotti¹, Katy Serth², Darin Stockhammer³

¹ Colorado College, ² Endicott College, ³ Bates College

RESEARCH SUMMARY

This project estimated the abundance of common bottlenose dolphins within the Cres-Lošinj archipelago from photo-identification data collected on boat-based surveys. Abundance is the foundational measure for a population protected under a Natura 2000 site designation, and repeating the estimate each semester builds the time series needed to detect trends.

02 Exploring the Effects of Trawling Boats and Seasonality on the Social Dynamics of Bottlenose Dolphins (*Tursiops truncatus*) in the Northeast Adriatic Sea

Faculty advisor: Dr. Grgur Pleslić

Zoe Ash¹, Aimi Davila², Rowan Howe³

¹ Bates College, ² Bucknell University, ³ Smith College

RESEARCH SUMMARY

This project examined how trawling boats and seasonality affect the social dynamics of bottlenose dolphins in the northeast Adriatic. Trawlers concentrate dolphins around a predictable food source, which can alter who associates with whom, while season changes both prey availability and fishing effort. Association patterns among photo-identified individuals were analysed against trawler presence and time of year.

03 Common Bottlenose Dolphin (*Tursiops truncatus*) Habitat Use: Spatiotemporal Differences in Age Class and Behavior within the Cres-Lošinj Archipelago

Faculty advisor: Dr. Grgur Pleslić

Virginia Brown¹, Toni Coria², Zea Ishimoto³, Angela McMahon⁴

¹ Wellesley College, ² Scripps College, ³ Santa Monica College, ⁴ Muhlenberg College

RESEARCH SUMMARY

This project examined spatiotemporal differences in bottlenose dolphin habitat use within the Cres-Lošinj archipelago, broken down by age class and behaviour. Where calves and adults spend their time, and where feeding, travelling, and socialising occur, determines which parts of the site matter most for protection.

04 Will the Small Survive? What Reproductive Success Metrics Reveal About the Cres-Lošinj Common Bottlenose Dolphin Population Trends & Its Conservation Needs

Faculty advisor: Dr. Grgur Pleslić

Erika Loo¹

¹ University of San Diego

RESEARCH SUMMARY

Abundance alone does not establish whether a dolphin population is viable; reproductive success does. This individual project examined what reproductive success metrics reveal about the trend in the Cres-Lošinj common bottlenose dolphin population — a small, resident, and closely monitored group — and what those metrics imply for its conservation needs.

05 **Seasonal Distribution and Industrial Fisheries Interaction Risk of Juvenile Loggerhead Sea Turtles (*Caretta caretta*) in the Adriatic Sea**

Faculty advisor: Dr. Matic Jančič

Sean Andrasick¹, Marja Barrett², Janie Finagal³, Rachel Hoffman², Samantha Schwab⁴

¹ University of San Diego, ² Dickinson College, ³ Scripps College, ⁴ Hamilton College

RESEARCH SUMMARY

This project mapped the seasonal distribution of juvenile loggerhead sea turtles in the Adriatic and the risk of their interaction with industrial fisheries, combining tracked turtle positions with fishing effort data. The Adriatic is a key developmental habitat for juvenile loggerheads and among the most heavily trawled seas in the Mediterranean, which makes the overlap between the two the central bycatch question for the region.

06 **Abundance and Diversity of Epibionts and Parasites on Loggerhead Sea Turtles (*Caretta caretta*) in the Adriatic Sea**

Faculty advisor: Dr. Mateja Zekan Lupić

Margaret Pecht¹, Savannah Terry², Benjamin Munoz³, Ashely Homme⁴

¹ Wellesley College, ² Wofford College, ³ Elon University, ⁴ Point Loma Nazarene University

RESEARCH SUMMARY

This project recorded the abundance and diversity of epibionts and parasites carried by loggerhead sea turtles in the Adriatic. The organisms living on a turtle's shell and skin record something of where it has been and how it has been living, and the assemblage serves as an indicator of host condition.

Center for Conservation of Marine Megafauna · Veli Lošinj, Croatia

01 Estimating the abundance of bottlenose dolphins (*Tursiops truncatus*) in the Cres-Lošinj Natura 2000 site, Croatia using Chao's closed population model

Faculty advisor: Dr. Grgur Pleslić

Aurelia DeHaven¹, Isabel Orem², Chloe Sprague³

¹ Colorado State University, ² Skidmore College, ³ University of Washington

RESEARCH SUMMARY

This project estimated the abundance of bottlenose dolphins in the Cres-Lošinj Natura 2000 site using Chao's closed population model applied to photo-identification data. The closed-population assumption suits the short survey window, and the estimator handles the unequal capture probabilities that arise when some individuals are more readily photographed than others.

02 Diurnal movement of bottlenose dolphins (*Tursiops truncatus*) in the Cres-Lošinj region of the Adriatic Sea

Faculty advisor: Dr. Grgur Pleslić

Reuven Frye¹, Jane Lively², Rachael Plaisted³

¹ Bates College, ² University of Richmond, ³ Wheaton College

RESEARCH SUMMARY

This project examined the diurnal movement of bottlenose dolphins in the Cres-Lošinj region, tracking how the population's distribution shifts across the hours of the day. Because surveys are run in daylight, understanding within-day movement bears directly on how every other measure derived from those surveys should be read.

03 Examining the habitat use of bottlenose dolphins in the Cres-Lošinj site of community importance using encounter rates from boat-based surveys

Faculty advisor: Dr. Grgur Pleslić

Patrick Stapleton¹, Sarah Verner², Caliana Weber³

¹ University of Richmond, ² Kenyon College, ³ University of Washington

RESEARCH SUMMARY

This project examined bottlenose dolphin habitat use in the Cres-Lošinj Site of Community Importance using encounter rates from boat-based surveys — the number of animals seen per unit of survey effort across the site. Encounter rate mapping identifies which parts of a protected area the population actually uses, as distinct from which parts it was designated to protect.

04 Preliminary assessment of loggerhead sea turtle (*Caretta caretta*) overlap with industrial fisheries in the Adriatic Sea

Faculty advisor: Dr. Matic Jančić

Gemma DeCarolis¹, Sara McKillip², Molly McWeeny³

¹ Bates College, ² Middlebury College, ³ Williams College

RESEARCH SUMMARY

This preliminary assessment combined satellite-tracked loggerhead positions with industrial fishing activity to establish where the two overlap in the Adriatic. The advisor describes the topic as well balanced against the students' competences and the output as high quality: an abstract was prepared and submitted to the 14th European Vertebrate Management Conference, held in May 2025, with the students as co-authors.

05 **Epibiotic and parasitic loading and composition of *Caretta caretta* in the northeastern Adriatic Sea of Croatia**

Faculty advisor: Dr. Mateja Zekan Lupić

Catherine Lehmann¹, Emily Lekas², Sarah Smith³

¹ Scripps College, ² University of Richmond, ³ Bates College

RESEARCH SUMMARY

This project characterised the epibiotic and parasitic load carried by loggerhead sea turtles in the northeastern Adriatic, recording both the quantity and the composition of the organisms found on each turtle. It opens a line of work the Center has continued in later semesters, subsequently extended to test the relationship between that load and host health status.

THE SCHOOL FOR FIELD STUDIES

Center for Conservation of Marine Megafauna, Veli Lošinj, Croatia. Titles, faculty advisors, student authors, and home institutions compiled from the SFS Directed Research project lists for Fall 2024, Spring 2025, Fall 2025, and Spring 2026.