



Figure 13: Visibility study of the coast line

5. CONCLUSION

The system of the Sardinian coastal towers has always fascinated both the experts of the matter and the laymen. The pivotal position of Sardinia, at the center of the Mediterranean and just a hundred nautical miles from the North African coast, made it a target of corsair and Barbary raids, moreover seeing how, with the winds in their favour, they could reach it in just one day of sailing. The opinions of the foreign onlookers about the system were so favourable, they inspired the development of similar defensive systems in their respective countries: this is how in the 19th century the system of the “Martello Towers” is developed in Great Britain. Despite this interest from multiple parties, serious studies on the argument can be counted on one's hand, and even rarer are those that confront the aspect of the geo-location of the towers.

The study here presented, without having the presumption of being an exhaustive analysis, wants to give its contribution to the knowledge of the coastal defence system by using an objective instrument such as the GIS software.

The objective we posed was to confirm or deny the criteria historians provide as the reason of the presence of towers in these specific locations.

Every GIS study begins with the gathering of data and the design of the database; finding the necessary information required a special attention, due to the scarcity of data and even, in some cases, the contradictions between historical sources.

The study has confirmed, in general, what the historians already affirmed. Conversely, the visibility analysis performed using the GIS brings us to revise the definition of some specific towers and their function in the defence system. This is in particular the case of the tower of Iscra Ruia, historically indicated as the communication semaphore between two parts

of Sardinia, Sarrabus and Ogliastra; being indeed blind in respect to other towers, it must have had instead functions of defence of the nearby territory. The same considerations may be made for the towers of Longonsardo and Porto Conte in the north-east of the island. Designed as watch towers for the control of the underlying coasts, they don't actually have any visibility over them. Thus, if a corsair ship managed to get close to the coast without being spotted, it could easily hide in one of the numerous coves that coast offered and then attack from there.

This alternative approach shows how GIS technology can represent a valid tool in support of the analysis of the historical assets, in addition to its natural use in the development of the architectural and environmental ones.

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