

# KALAMAS & ACHERON

NATURE / PEOPLE / HISTORY / CULTURE



# Kalamas

The Kalamas River, known as Thyamis in antiquity, springs from the Kalpaki Basin of the Ioannina Prefecture and flows into the Ionian Sea above Igoumenitsa, which is the capital of the Prefecture. Along the river's 115 kilometer (km) length, it receives the flow of many tributaries so that the river's total catchment area (1,894 square km) is almost comparable in size to the entire northwestern Epirus.

The Kalamas River, at its inception, receives the flow of the Gormos River which originates from the Pogonio area and springs from a point near Kakolakko. From the south, the Kalamas River receives the flows of the Veltitsiko, Smolitsa, Tyria and Zaloggopotamos Rivers, while from the north, the Kalamas River receives the flows of the Nizero, Limpoyznta, Nistiko, Geromitsaina, Koutsi, Kousovitiko, Laggavitsa, Kalpakiotiko and Bogazi Rivers.

The largest springs which contribute to the Kalamas catchment area are located in Kakolakko, Kefalovryso, Glava (Oraiokastro), Agious in Gormo, Kalpaki, Nistoka (Ieromnimi), Mana Tou Nerou (Geromitsaina), Kefali (Kokkinochoma Smolitsas), Mana Tou Nerou (Lista, Laggavitsa), Anavrystika (Raveni), Spyropigadia (Osdina) and Mylous (Skefari, Bogazi).

Since the 1960s, Kalamas drains through a canal that was built between Mavronoros and Mastilita. Prior to the 1960s, Kalamas River waters passed through a meandering river bed directly between Lygia and Mavronomos, flooding the plain during the winter months. It is for this reason that the new river bed was constructed together with the dam next to the village of Ragio to facilitate farming irrigation. These interventions created the new, continuously expanding river delta which currently measures 13.5 km.



The bridge in Gretsí (Gormos)

The peninsulas of Drepano in Igoumenitsa and Skala in Saghia were created by the Kalamas River, which seemed to have had many access points to the sea, over the centuries, along the entire coast from Igoumenitsa to Saghia. There were periods throughout the river's history in which the waters of Kalamas were released into the Ionian Sea by more than one river bed.

In antiquity, Kalamas provided an important communication and transportation route for those who lived in the inland parts of Epirus. The Myceneans reached the springs of Kalamas by following the river, and Professor S. Dakaris speculates that there must have been an important commercial station in its estuary (Thesprotia p. 68). During the Archaic and Hellenistic periods, large cities adjacent to the river banks flourished including Lygia and Mastilitsa in its estuary, Gitani at the junction of Kalpakiotiko and Kalamas Rivers, Fanoti in the area of Pigadoulia, Osdina at the end of the gorge and Raveni at the river's point of origin as well as Chrysorrachi near its springs. These cities were destroyed by the Romans in 167 BC and replaced by farmsteads and "polismata" (small settlements) (Ladochori, Alamani, Aghios Georgios, etc.). During the Byzantine period, the Kalamas River continued to attract human settlements, including Saghia, Igoumenitsa, Osdina, Vrosina, Veltsitsa, and Opaghia, while important monasteries were established adjacent to its banks, such as the monasteries of Ragiou, Giromeriou, Osdinas, Michlas, Pateron, Sosinou, and Vellas.

A large road and path network necessitated the creation of many passages along the entire river. During the Roman period, an extensive road which connected Apollonia with Nikopoli began at the river estuary and it is believed that a large bridge once existed next to Mastilitsa. Since that time, the long length and especially the high elevation of the river rendered the construction of bridges in its southern part impossible. The largest bridge with at least four arches was in the area of Neraida of the Thesprotian Prefecture and has since been destroyed. The foundations of the largest trussed bridge of the Kalamas River, which had stone columns and a wooden surface for crossing the bridge, are located at the gorge's exit below Osdina in the area of Boliana. A similar bridge, although smaller in scale, exists today in Laggavitsa next



Small waterfalls at Vöthnes of Dafni

to the Aghia Marina Monastery. The remainder of the Kalamas River's bridges, many of which are standing today in good condition, are all arched. The most peculiar of all of the Kalamas River bridges is **Theogefyro**, which lies below the village of Lithino in the Prefecture of Ioannina. It is an enormous boulder that the Kalamas River undercut thus allowing the river to flow beneath it. This natural bridge was the main river crossing point during the winter months until the bridge in Raiko was constructed. The largest road (**Derveni**) of the Kalamas area passed through Theogefyro and Raiko which connected Sagiada with the city of Ioannina. This road was constructed for the main purpose of transporting sea salt from the salt pans at the river's estuary to Ioannina. Subsequently, all of the products of the Ioannina region were transported via this road to the port of Sagiada and then to Corfu before their final destination which was Venice, the metropolis of the period. Reciprocally, products from Venice were transported to Ioannina by this road as well. This road was extended by the Ottomans in 1716 to transfer army, arms and supplies from Larisa to Sagiada and Vouthroto for the great offensive against Corfu.

Another important road connected Ioannina with the city of **Argyrokastro** and the port of Aghioi Saranta. This road crossed the Kalamas River via the bridge in Areti and later via the bridge in Aghious in Gormo. The road that connected Filiati with **Paramythia** passed through the area of Menina, and the road that connected Ioannina with Paramythia passed through Tyria. Ferry crossing points with row boats or "lountres" or "kalathes" (rough structures like baskets) were created in Ragio, Vryssela, Boliana, and Vrosina where bridge construction was impossible given the available technology of the period. "Liasas", simple wooden structures on trees for facilitating river crossing are still used today such as the one in **Gribovo**.

On the banks of the Kalamas River and its tributaries, watermills as well as "mantania" (traditional washing facilities) for clothes were built. The water required for watermill operation was received from a distance to secure a smaller angle of flow and a high drop at the point of the watermill wheel. This is how a network of water ditches was developed. The network extends for



The river in Devil's Bridge

many kilometers and passes through rough, inaccessible locations to reach the watermills. The most important watermill ditch is in the area of Thogefyro of Kalamas where a special ditch in a ravine was constructed and a hole through a concrete rock was opened in order to facilitate the flow of the water from a spring in the gorge. In the area of the gorge of Laggavitsa, special bridges were constructed to support the water ditches that enabled the transfer of water, while in Gormo one can find bridges with “roofed”, or enclosed, water ditches.

Apart from the aforementioned structures for the transfer of people, goods and water, there are also temporary structures for the purpose of fishing in the river. Tree trunks, branches and pebbles from the river are used to construct traps, known as “klonari” and “kalatha”, with or without the use of bait in order to capture trout and carp. At the river delta there are large areas, referred to as vivaria, which people formerly fenced with cane and modernly fence with chestnut tree trunks and plastic net to capture grey mullet, gilt-head bream and sea bass. Today, organized fish farms exist in the springs of Kalamas and in its tributaries such as Koutsovikos, Laggavitsa as well as others.

Concluding our recitation of human interventions on the river, it must be noted that today the Kalamas River is polluted primarily from the basin of Ioannina through the ditch of Lavitsa which ends in the trench of Lapsista in Klimatia (Veltsista) as well as from the fertilizers and pesticides which are used in farms along the river. The wastewater treatment facility in Lapsista does not provide adequate protection for the river.

Parts of Kalamas, most notably the river delta and the Straits, have been declared as nature protection areas and belong to the EU Natura 2000 network. On the beach of Sagiada there is a Visitor Information Center for these areas and for the rest of the river. To enhance the river's protection, several additional measures are needed to prevent waste from entering the river and promote organic farming, ecotourism and agrotourism development that will capitalize on the river's natural beauty. Kalamas is one of the most beautiful rivers in Greece with relics and monuments of times passed that should become an attraction for thousands of environmentally conscious visitors thus significantly improving the quality of life for its few inhabitants.

# Upper Kalamas



Kalamas' large waterfall



Springs in Devil's Bridge Gorge

The springs of Kalamas are located in Kalpaki and in the grand gorge between the villages of Katarraktis and Lithino, in the area of Upper Kalamas. Theogefyro and Diavologefyro, two rare geological phenomena, and the large waterfalls of the river are located in the grand gorge. Two tributaries, Gormos and Veltsistikos, together with the smaller tributaries of Nizero, Libountza and Nistiko unite their waters with the waters of Kalamas. In Gormo there is a gorge which is an EU Natura 2000 protected site and two beautiful stone built bridges, Katogefyro near Oraiakastro and Gretsni near Paliopyrgo. The grand bridges



Efforts to access Devil's Bridge Gorge

in Agious and Raiko along with many of the important bridges by the rivers springs and at its point of origin were demolished, while the bridges of Veltsistiko, Gouzdani and Sitaria as well as some small bridges still remain.

A plethora of ancient monuments exist in the area, especially in the area of Gormos which has been inhabited since antiquity, and it is well worth a visit to the walls of Chryssorachi. The monastery in Vella continues to operate as such today while the monastery of Sosinos, located on a conical hill in the plain of Parakalamos, is undergoing renovation. The monasteries of Pateron near Lithino, Metamorfosis Sotira in Veltsista and Paliouris are just a few of the many famous monuments in the area, and the beautiful mosaics of Opagia are adjacent to Kalamas' springs.



The raging stream in the gorge



# Diavologefyro

The most beautiful as well as the most dangerous gorge through which the Kalamas River flows is located between the villages of Katarraktis, formerly known as Gliziani, and Lithino. The gorge has two natural bridges referred to as the Theogefyro (God's Bridge) and the Diavologefyro (Devil's bridge). Both of these bridges were created by the erosion of rocks at the base of the natural levee that once created large waterfalls. We do not know when Theogefyro was created; however, it has been a natural crossing of the Kalamas River since antiquity, and in the Middle Ages supporting stone arches were built at its narrowest point to expand the roadway of the bridge. By contrast, Diavologefyro was never used as a river crossing since it is situated in an inaccessible area and there is a steep precipice on the right side of the river that takes its name from the long standing struggle between Good and Evil. Where God creates something to facilitate and help human beings, the Devil creates something similar but useless to mock people.



# Theogefyro

Before its base collapsed, Diavologefyro was the great waterfall about which many travelers wrote and which Lord Byron immortalized in one of his poems.

Aravatinos mentions that “for its height and the heavy fall of its flow, the river’s waterfall creates a great impression upon the visitor with its sound capable of being heard from a [walking] distance of four hours away”. Amalia Papastavrou completed the picture for us by saying that “the rock from which the river flow dropped had a 95 foot height. The area is famous, beautiful and hard to describe. The river flow dropped on a rock spreading a thin, spring-like mist in which all the colors of the spectrum could be observed”. This waterfall collapsed after a heavy rainfall that flooded the plain of Vellas and transformed it into a lake. Cartographer, Michael Chrysochoos, who happened to be in his home town of Zitsa that day on December 6, 1880, described the event as follows: “The weight of the water mass took the rock in its path and undercut it. The water flow opened a passage under the rock thus creating a Second Theogefyra”. Tracks of the former waterfall can be found even today on the right bank near Diavologefyro. Higher up, there are two smaller waterfalls. One is at the entrance of the gorge and the bigger one is located towards Mazaraki. From the old watermill, which has been renovated and operates as a restaurant, there begins an impressive water trench that has been carved into the steep rock and ends in a great spring inside the gorge.



# Mushrooms

A fairy-tale world of mushrooms can be found hiding under the old trees and the dense vegetation of the gorges of Kalamas. Their collection could be dangerous for the novice since several are hallucinatory or poisonous such as *Amanita muscaria* and *Amanita phalloides*, but their discovery,

# and Fairy Tales

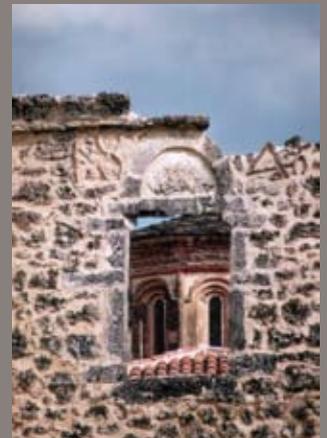
observation and photographic value are more than rewarding. Of course, the experts in edible mushrooms, which include *Amanita caesarea* and *Morchella vulgari*, can enjoy a delightful meal that nature provides freely.



# The Pateron Monastery

(Monastery Of The Fathers)

The famous monastery of Pateron which is dedicated to the Dormition of the Virgin is located on the left bank of Kalamas and across from Lithino. It was built on this location in 1590 after two other places next to Kalamas were tried and abandoned. The entire fertile area together with the village of Lithino once belonged to the monastery. The monastery even had a stake in Vlachia which used to pay 20,000 florins annually to the monastery. Despite this wealth, the monastery became bankrupt and dissolved in 1910. The monks' quarters collapsed and only the monastery's impressive main church survives today.







Gormos tributary of Kalamas River



Old area photographs taken by Spyros Meletzis and Apostolos Vertodoulos.

Upper left: The large stone bridge “in Agious” in Gormo. The bridge which was built on a strategically important point was blown up by the Greek Army in 1940 to retard the Italian advance.

Upper right: photograph of a “liasa” (rough bridge) over Kalamas in Gribovo.

Lower left: The great waterfall of Kalamas.

Lower right: The old bridge below the village of Kataracthis (Gliziani) and the famous Italian constructed bridge of Simos which was also blown up by the Greek Army to retard the Italian advance.





Vrosyna stone bridge



• Egyptian Vulture (*Neophron percnopterus*) • Dahl's Whip Snake (*Platyceps najadum*)

## Intermediate Kalamas

The large, prominent gorge between Vrossina and Pente Ekklesies in the area of intermediate Kalamas has been designated as a Natura 2000 site. The unique bridge of Boliana with its three stone columns embedded in the middle of the river has the appearance of an unusual piece of sculpture. The acropolis of Osdina with its beautiful post Byzantine period churches on the rocks is above the bridge. The area of Fraggopidima is within the narrowest point of the gorge where the old "askitaria" (hermitages) are located. The ancient acropolises of Vrosina, Raveni and Doliani are situated in naturally fortified positions next to the river banks while in Mikra Stena (Small Straits) the Zorgiannos Tower is an imposing structure.

Tyria, Zaloggitikos, Laggavitsa, Smolitsas, and Koutsis are all tributaries of Kalamas. Some of the stone bridges of Kalamas include the bridges of Paliouri, Zaloggogefyro, Vrosina, the three bridges of Tyria, the three bridges of Smolitsa and the bridges of Laggavitsa. The monasteries of Paliouri, Panaghia Raidiotissa, and Aghia Paraskevi in Vrosina together with the historic Dichounio Monastery, form the monastery network of the area.



# Fraggopidima

The most beautiful part of the gorge is located at the place called Fraggopidima where a Frank rider who was chased by the Ottomans jumped over the gorge with his horse in his effort to escape.



# Stone Bridge of Tyria

The remains of the stone bridge of Tyria, which was blown up by the British during World War II, are close to the point where Tyria meets Kalamas near the road that connects Igoumenitsa with Ioannina.

Wildflowers of Kalamas  
(from left: *Galanthus nivalis*, *Doronicum columnae*, *Ecballium elaterium*, *Primoula vulgaris*)



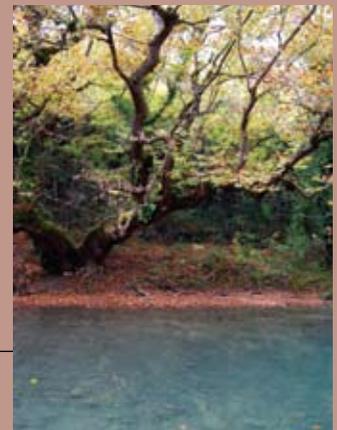
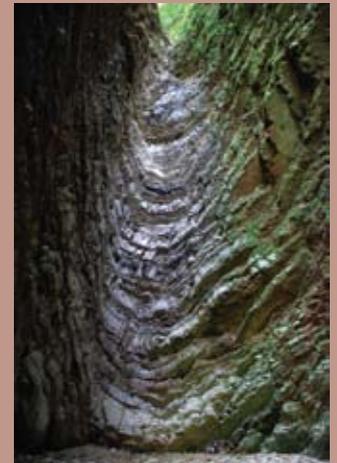
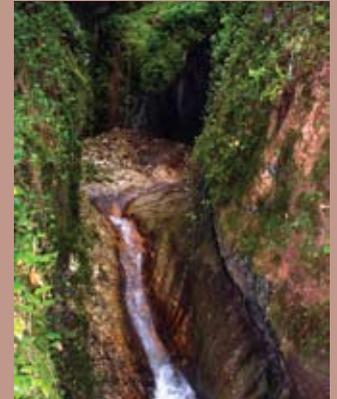
# The Straits of Laggavitsa

Laggavitsa, which is a tributary of Kalamas, originates from the Mourgana Mountain. Laggavitsa's springs were named "mother of water" by the locals, as the emerging water never stops, even in the summer. There are many small villages near the river that continue to maintain their folklore and traditional identity.

Very few fortunate travelers visit the Straits of Laggavitsa which is probably the least known of the entire region. The gorge of Laggavitsa combines natural beauty with human activity. Furrows have been carved on the gorge's walls which guide the water many kilometers away. Accompanying the walking traveler along his or her explorations are stone bridges which are currently in ruins in the water, one bridge that remains standing against the elements and the trials of time, old walking paths, mills and land terraces. An old water canal bridge still survives today on the right river bank. The ruins of the bridges of Lykos and Brania lay in the gorge.

In the monastery of Aghia Marina, which is in a privileged location with an exceptional view of the river, the main church still survives while next to it, the dormitories of the monks lay in ruins. The foundations of the large bridge which once connected the banks of the river lay very close to the monastery.

- The Great Pothole in Polydrosio
- Karamani's Pothole in Raveni
- Laggavitsa below Brania



Watermill trench in Laggavitsa

# The Kalamas Straits



Fraggopídima



Raveni Hill

The gorge (or Straits) of Kalamas has been declared a Natura 2000 site because of its rich fauna and flora and its natural beauty. The ancient cities of Osdina and Raveni stand guard at the entrance and the exit of the gorge, resisting the passage of time with their fortified walls, centuries-old ruins, artfully built churches and their history.

The gorge is easily accessible from Ioannina, Igoumenitsa or Filiates. On the Igoumenitsa – Ioannina road, turn left towards Plakoti and continue towards Pente Ekklesies. Before you enter the village, follow the paved road towards “Paliochora” as the local residents call the ancient settlement. Continue until you reach the Belei Bridge on Kalamas. The acropolis of Osdina with its ancient castles, Byzantine fortifications and post Byzantine churches is on the rock.

Enter the gorge from the left bank of the river. In front of you rest the ruins of the unique Boliana Bridge which is proof that this was a

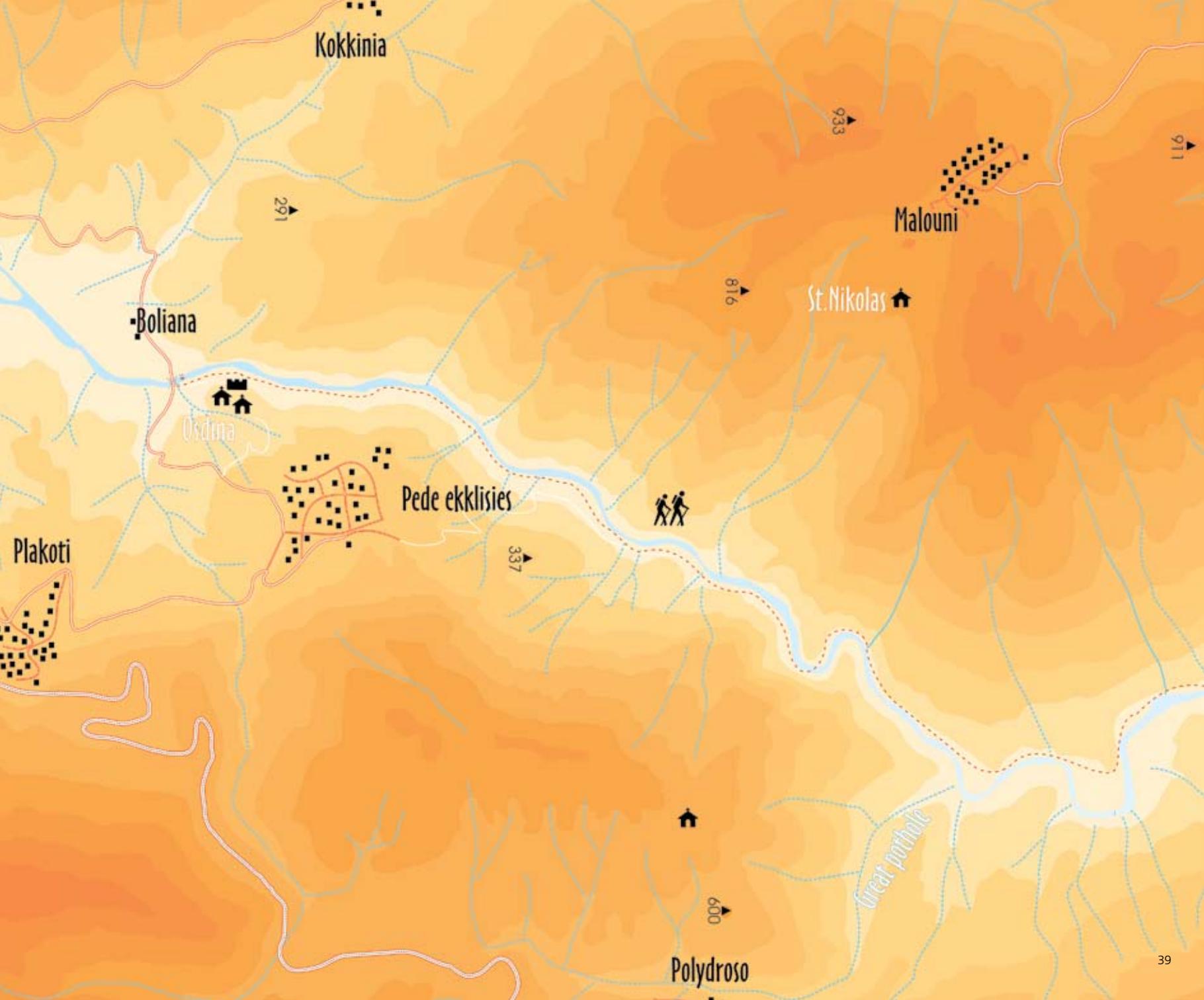
# The Kalamas Straits



Boliana Bridge



river crossing point even in ancient times. The caves on the steep rocks above the river have provided refuge for many hermits over the years. You can reach the location called “Spyropigadia” with its many water springs without having to enter the river. (At some point, you will have to climb a short distance away from the river.) If you decide to cross the gorge, you should know that the path is cut at the narrowest gorge point which is called Fraggopidima. You should be prepared to enter the river in order to cross to the opposite bank if you are physically fit. (For those of you who do not want to take the risk, we suggest that you stop at this point and take the necessary steps to enable you to cross the gorge from the opposite side in Polydroso.) A little higher, you must make a choice again, to either continue in the river until the point of “Anavrystika” – which is a beautiful area with many water springs under the castle of Raveni – and to ascend the river from the road that reaches the river or to cross over to the left river bank and take the path which begins at an old watermill and ascends to Polydroso. There you can visit the Folk Museum of the village and dine. Regardless of where the course ends, you could return by retracing your steps or by following the road. The course is 4 hours long and quite difficult. You have to be careful!



Kokkinia

933

971

291

Malouni

Boliana

816

St. Nikolas

Osdina

Pede ekklisies

337

Plakoti



600

Great pathhole

Polydrosos

# Stone bridge of Tyria



This beautiful stone bridge is located near the village of Seniko (in Chelimodi location of the Livadakia tributary of Tyria) on the side of Egnatia Odos motorway and has survived in good condition.

Here, Egnatia Odos motorway met the bridge which was moved a little further away. At least it was not buried under the rubble of indifference.



Old photographs are a window to the past, where one can witness in detail aspects of life back then: lifestyle, clothing, work, happy and sad moments as well as the achievements of people. The area of Kalamas has been photographed by hundreds of unknown photographers, as well as by famous artists like Fred Boissonnas, Spiros Meletzis, Apostolos Vertodoulos and Gerasimos Michas.

Upper: Photograph of Spiros Meletzis illustrating the meandering of Kalamas which was taken before he entered the gorge in the Vrosyna area.  
Right: Iron bridge on the Kalpakiotiko tributary of the Kalamas River. In 1920, the bridge parts were transported by boat to the port of Sagiada and then by mules to the point of assembly.



Below: Dam built of wood, branches and stones. In the Laggavitsa area, the entire village participates in the construction effort as the aim is shared by all - to provide water for farm irrigation.

Below right: After explosives decommissioned the large bridge of Vrosyna, the bridge was replaced by a “kalatha” (large basket). Here, a soldier crosses the river.



Large cave at Fraggopidima

# Monastery of Aghios Minas in Kokkinolithari



On a rocky mountainside of Laggari Mountain, the monastery of Aghios Minas is a site well worth seeing in the area. Seventy two steps guide the visitor to the top where the monastery is built. According to a legend, when the village collapsed, Saint Minas used his hand to prevent the fall of the giant rock on which the monastery was built. On the rock side, the giant palm can be seen. There are numerous legends about many inhabitants of the area who fell from the rock without being injured. The monastery which is under the auspices of the Giromeri monastery was the place where all of the mentally ill people of the region were kept, chained in cells.

# The Dormition Of The Virgin Monastery Of Osdina

At a strategically important crossing of Kalamas, a steep hill was fortified with thick walls in order to protect the large bridge of Boliana constructed below. Regardless of the devastations that historical events brought to the area, the site had been inhabited since antiquity until the great Islamizations that followed the revolution of Dionysus the Philosopher. It was then that the local people sought refuge in the villages of Thessaly and Macedonia leaving their fertile land and olive groves in the hands of the Muslim autocratic authorities.

Osdina had many large churches. Only a few of them remain

standing on the sheer rocks and the ruins of the once fortified city. The monastery of the Dormition of the Virgin was built during 1609-1610 on the ruins of an ancient temple by Reverend Galani and Ioanni Petrop-sara who was a member of the large Apsaradon family. Its interior is full of wall paintings but it requires urgent conservation. In front of the church's bema, on the right side, there is an octagonal limestone lectern which was decorated with linear design friezes. From the large monastery of the famous city, only its main church has survived the passage of time with its support structures nearby in ruins.





Panoramic view of the river at Fraggopidima



Doliani's Castle

# The Skala Of Zorgiannoy



The tower in Scala

In the small straits, next to Kalamas, there are the ruins of a large tower which dominates the tight passage. From this point, guards formerly controlled the river which was the large waterway that united the Thesprotian coast with the inland territories. Local legends recount stories of the wicked, old Venetian tower owner, and the older area residents tell stories about Monovyza who routinely terrorized them as she passed through the area.

The area has been inhabited since prehistoric times because it has offered everything that man could wish for - food, water and security through the secure control of the narrow passage. Near the tower is the cave which was inhabited during the Neolithic period. It was created by the erosion of the horizontal slates caused by underground water flow. The cave's entrance is short thus providing additional security for its residents. The cave's décor is impressive and by widening its entrance and opening a path next to the torrent of water, it could be ideal for tourism development in connection with the other monuments of the wider Doliani area.



Springs at Vothnes

# Gitani



The ancient settlement of Gitani is enclosed on three sides by Kalamas, and it is situated at a slightly higher elevation from the point where the Kalpakiotikos tributary meets Kalamas. Gitani had a major strategic and commercially important position which was attributed to Kalamas due to the river's navigability all the way into the city. It is not by accident that the most important ancient cities were built along the river (Lygia, Mastilitsa, Gitani, Doliani, Osdina, Raveni, Vrosyna, Chrysorrachi, and others.)

This important commercial city became the capital of Thesprotia after Elea which is in the Acheron area. The city was founded in the second half of the 4th century BC and was destroyed by the Romans in 167 BC.

A five thousand seat stone theater was built, facing the river, outside the city's western fortification wall. The theater was used for cultural shows, political meetings and administrative meetings of the Thesprotian tribes. One of the theater's enduring features is that the stone seats were carved with the names of the eminent people of the area. The theater was constructed in the middle of the 3rd century BC following which the entire area was named after it – Gouman, the Slavic meaning of which is threshing floor.

In the photographs, the theatre next to Kalamas.

# Lower Kalamas



Fisherman at the river delta



Bird-watching at the river delta



Turbulent Kalamas at the dam

The large river delta, which is configured within the triangle of Igoumenitsa, Gitani and Sagiada, dominates the lower Kalamas area.

Over the centuries, the river, which has its estuary near the dam in Ragio, through the accumulation of matter carried by the water, has transformed the sea area between the islands of Syvoton to a muddy plain. The peninsulas of Drepano and Skala Sagiadas were created by the river.

In the 1960s, large irrigation and drainage projects altered the former river estuary which was relocated to the area between Mavrovouni and Mastilitsa. This resulted in Kalamas creating a new delta by the sea which is constantly expanding.

The greater Lower Kalamas area is the former site of the ancient cities of Gitani (between Kalamas and Kalpakiotiko), Lygia (on the peninsula adjacent to the former estuary), Mastilitsa (on a hill which was once an island adjacent to the former estuary), Pyrgos (in the former estuary), and the monasteries of Ragiou next to the dam and Giromeriou next to the Kalpakiotiko River banks.

The stone bridges of Goumani, Kalpakiotiko, Foikinou, Aghion Panton and Kotsikas together with the castle of Kasnetsi complete the landscape of the area.

# The Kalamas River Delta



Estuary landscape



• Cicada (*Magicicada* sp.) • Argiope spider (*Argiope* sp.) • Mute Swans (*Cygnus olor*)

The estuary of Kalamas is one of the most important wetlands in Greece with a rich ornithological biodiversity which attracts many visitors who are interested in aquatic birds.

Below the hill of Mastilitsa, the heart of the wetland is situated on the right side of the river.

On the sea side, there are the old salt-marshes of Sagiada which modernly have been incorporated into the wetland.

On the southeast side of the hill of Mastlitsa, the extended ruins of an ancient castle still remain. The view of the river from the castle walls is exceptional.

The small islets that have been created in the delta are an excellent site for observation of the thousands of birds which live in the wetland. These islets can be reached by boat from Sagiada.



Sunset at the river delta



• Sea Rush (*Juncus maritimus*) • Swallowtail butterfly (*Inachis io*)

Kalamas is navigable by small boat until its last bridge. The voyage is truly resplendent. You can obtain information about the river delta, its flora and fauna from the Information Center in Skaloma Sagiadas.



The lake at the dam



Old photographs of Kalamas and of human activities adjacent to and in the river.

**Top left:** The arched stone bridge of Goumani, photographed by Fred Boissonnas in May 1913. A mule driver with his loaded mules crossing the bridge which is situated at the Kalpakiotikos and Kalamas junction.

**Top right:** Fishing in Kalamas with the wattle method. The fishermen

would close an entire river area with wicker fences and then drive the fish into the straw nets with their flat bottom boats.  
Photograph, by Giannis Kallis.

**Below, left to right:** The river in Menina. The passage by small boat near Vrysela. Shepherd on the Goumani walls.  
Photographs by F. Boissonnas.





Mandarin tree orchard at the river delta



Kalamas and the last bridge in the river delta



The last bridge of the Kalamas River is situated in the new river bed which was opened in the 1960s on the remnants of a former river bed. (Kalamas continually created new channels to the sea from the western part of the Igoumenitsa port through to the Sagiada port.) This elevated cement bridge is a great observation point of the river delta. On both banks of the river, a small stretch of wetland vegetation continues along the entire river. This vegetation, which is of extreme significance to the ecosystem, is threatened by the uncontrolled construction of pumping stations for farm irrigation and land reclamation for property rights expansion!

• Myrtle (*Myrtus communis*) • Coypu or Nutria (*Myocastor coypus*)



## The Bridge in Foiniki

This beautiful stone bridge is situated below Foiniki in the Valley of Bogaziotikos River which unites with Kalpakiotikos below Filiati. Since the bridge construction, the river bed has shifted its location and, as a result, the bridge currently stands in a landfill hundreds of meters away from the river. It was built in the 19th century by Nikolaos Binakis from the neighbouring village of Sideri. Tradition suggests that the bridge formerly had three arches; however, this may refer to supporting arches that in all likelihood existed.

• Cow herd in the wetland • Cattle Egret (*Bubulcus ibis*)



# The Bridge of Goumani



Kalpakiotiko bank near Goumani



The stone arched bridge of Goumani is an unfortunate example of the nature and extent to which human activities can influence not only the natural environment but also the monuments of our cultural heritage. This bridge served generations and withstood the rapid stream of the tributary and the flooding of Kalamas. In the 1960s the dam in Ragio was built as part of the large scale irrigation and drainage projects that were applied in the area.

This resulted in the flooding of the gorge and the creation of an artificial lake which was necessary for irrigation. The stone bridge was covered half way by the elevated water and became vulnerable to the newly generated aquatic pressure in its centre. Shepherds took stones from the bridge crossing and used the bridge to support water pipes for farm irrigation. As if all this were not enough, the entire area has been inundated with trash that is uncontrollably thrown into the river by inhabitants from the city of Filiates and the surrounding area.



American pokeweed (*Phytolacca Americana*)

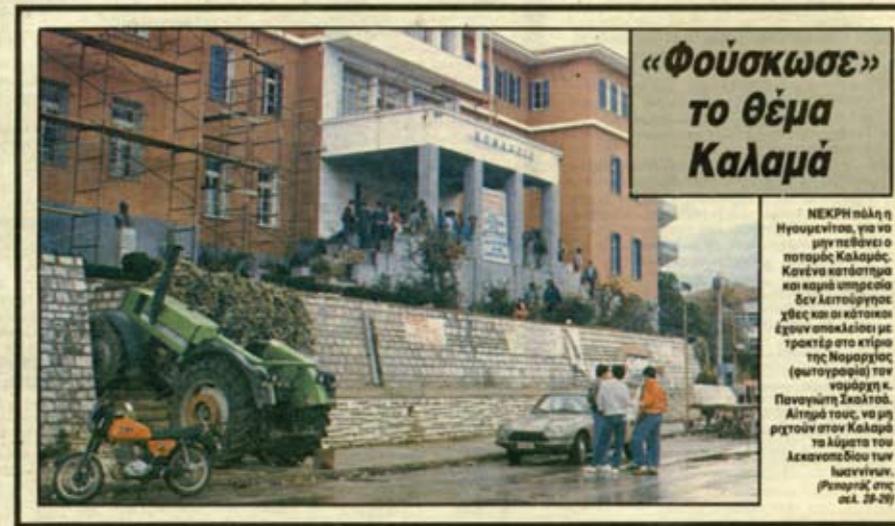


Common Kestrel (*Falco tinnunculus*)

# “NO MORE WASTE IN KALAMAS”



Stakeholders assembly in Igoumenitsa in 1988



Front page of the national Greek daily "TA NEA" ("THE NEWS")

In the autumn of 1988 following numerous warnings, the residents of the “Parakalamion areas” (areas near and by the river) blocked Igoumenitsa, the capital of the Prefecture, and all of Thesprotia with their tractors.

This unprecedented mobilization had a major impact in Greece and the rest of the world. The local residents demanded that Kalamas not be used as a waste deposition site of the proposed sewage treatment plant, scheduled to be built in Ioannina.

The Greek national administration was paralyzed by this action for a long time as the area residents continued to demonstrate peacefully against their government’s plans.

Finally, contrary to the government assurances given to the local residents as well as the scientific studies conducted that suggested alternative solutions, the waste of the Ioannina basin together with the farming waste of the area, were directed into Kalamas resulting in the degradation of its water quality.



Great Cormorant (*Phalacrocorax carbo*)



Goldfinch (*Carduelis carduelis*)

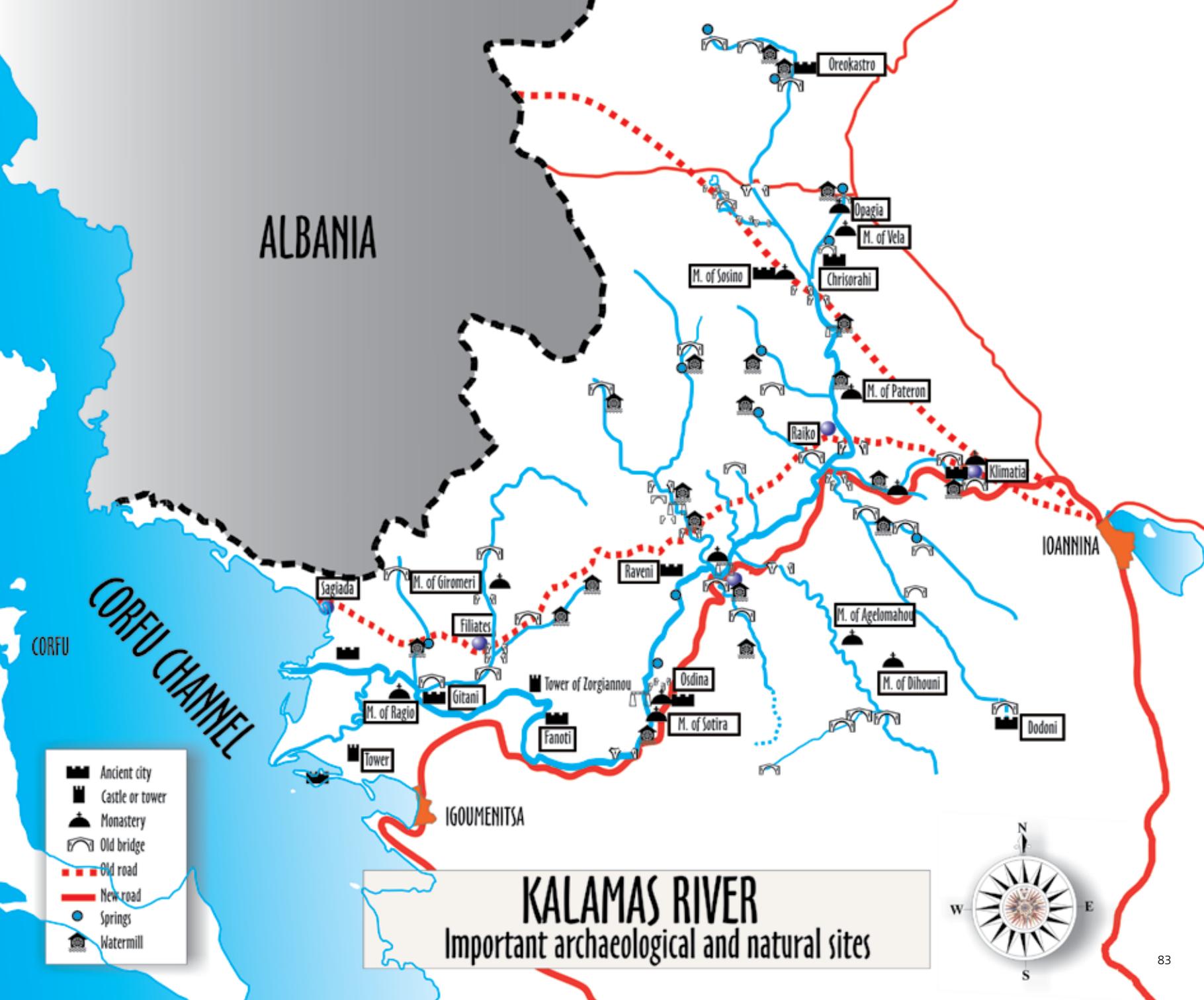
These are some of the bird species that can be found in the delta of Kalamas. They search for food in the lagoon and the shallow waters of the old saltpans. The conditions are ideal for resident species of the area, as well as for migratory species that follow the “grand route” of Western Greece. Migratory birds need a network of wetlands in order to cross vast

areas and the shallow waters of the delta prove crucial for their journey. Protection and extra food is provided in the surrounding hills and mountains. The uncontrolled human actions (draining, deforestation and the subsequent creation of new farmlands in the area) cause major problems to the area’s fauna. Due to its significance, the area is a designated Natura 2000 site.

- Grey Heron (*Ardea cinerea*)
- Common Buzzard (*Buteo buteo*)
- Black-winged Stilt (*Himantopus himantopus*)

- Hoopoe (*Upupa epops*)
- Dalmatian Pelican (*Pelecanus crispus*)





ALBANIA

Oreokastro

Opagia

M. of Vela

M. of Sosino

Chrisorahi

M. of Pateron

Raiko

Klimatia

IOANNINA

CORFU

CORFU CHANNEL

Sagrada

M. of Giromeri

Filiates

Raveni

M. of Agelomahou

M. of Dihoumi

Tower

M. of Ragio

Gitani

Tower of Zorziannou

Fanoti

Osdina

M. of Sotira

Dodoni

IGOUMENITSA

# KALAMAS RIVER

Important archaeological and natural sites

-  Ancient city
-  Castle or tower
-  Monastery
-  Old bridge
-  Old road
-  New road
-  Springs
-  Watermill

