

Reviving Oriental (Anatolian) Sweetgum Forest in Southwestern Turkey

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Interim Report IV

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1. **Current Distribution Analysis:** *Insufficient data belong to the sweetgum forest, leads to lack of conservation motivation of forestry departments. Thus, firstly we will collect related forest cover literature from 1800s to now, and analyze how the data is changing. Secondly we will show the changing of the forest cover between 1970-2015 over Turkey with using field trips and remote sensing data. Thirdly we will prepare distribution and corridor maps. Finally we will press a short communication.*

Progress: We finished our field trips (from Orontes River to Minor Meandros River), face to face interviews (in Turkey, Rhodes, Cyprus) and modeling studies. We visited 82 field-points. While we detected to oriental sweetgum trees in 42 field-points, we couldn't see the species in 39 field-points. At the end of this study we created one current 'existent-absent map' by using Google Earth and some distribution model maps (last glacial, mid-holocene, present, year 2070) by using Maxent Program.



We discovered the highest ecological distribution point of the Anatolian Sweetgum Tree at 1300 meter where is the upstream of Aksu River (Southern Anatolia).

We explained the results in the ecology congress which was held on Mugla University (which is the closest university to the sweetgum forests) in between 14-17 September, 2015. After that congress, we also presented our findings to the Turkish General Directorate of Forestry in order to take the future conservation efforts. Nowadays we are going to prepare an article about this study combined with the Anatolian Sweetgum Tree's climatic change conditions. On the other hand, our findings sign the artificial water retention projects such as dam and hydroelectric

power plants are harmful to the sweetgum forests irrevocably. To attract attention the people on this subject, we will prepare the results for one Turkish popular science magazine. Next year, we will also continue to the field trips where some places that we couldn't reach for some reasons such as weather conditions, permission issues etc.

2. **Wildlife Research:** *We know that there is a special wildlife inside the forest due to its flooded properties (otter, water vole, jungle cat, caracal etc.), and it must be discovered. Within this scope we are going to focus on these keystone species. When we achieve this aim, we can create a new special value for the forest in the eyes of locals and decision makers. Due to the limited project time, we will use the camera trap methodology. We'll select 8 big forests & coppices along the coastal districts of Mugla Province. Finally we will identify the key wildlife species for the forest and their conservation action plans.*

Progress: Until today, our camera-traps have taken 785 camera-trap/day records. And they will be still going on to take records until at the end of the 2016 winter period. Also we are working with 30 metal traps (catch-release methodology) for small mammals. We are recording amphibians, reptilians and birds with empirical observations too.

During our camera-trap studies we've recorded otter, wild boar, red fox, marten, badger and caracal species inside the sweetgum forests. We've also recorded 4 small mammal, 4 amphibian, 8 reptilian and 38 bird species until today. The wild life research activity took place in the press with 10 National and 32 Local news (2 regional and 2 national interviews). We will prepare an article about the results following the photo trap study finishes at the end of the 2016 winter period.

Except of above, we recorded the European Wild Cat (*Felis silvestris*) for the first time inside of the Anatolian Sweetgum Forests during our autumn-winter field trip period. Wildcats are found in a wide variety of habitats, from deserts and scrub grassland to dry and mixed forest; absent only from rainforest and coniferous forest. European wildcats are primarily associated with forest and are found in highest numbers in broad-leaved or mixed forests with low population densities of humans. They are also found in Mediterranean maquis scrubland, riparian forest, marsh boundaries and along sea coasts. Anatolian Sweetgum Forests are generally under the water during the whole year and very humid habitats, also their groundwater level is so high. That's why this record is very important for the European Wild Cat's habitat diversity and preference.



We saved the wild cat (*Felis silvestris*) for the first time inside of the Anatolian Sweetgum Forests during our autumn-winter field trip period.



Until today, our camera-traps have taken 785 camera-trap/day records. Nowadays we are continuing to our autumn-winter period researches (amphibians, reptilians, birds, small and big mammals).

- 3. Therapy Forest Experiment:** *We will study how and how much Sweetgum Forest will play a role as the therapeutic effects (anti-aging, relaxation, rehabilitation, supporting the mental health etc.). We selected 170 hectares wide sweetgum forest within the border of Fethiye District because of it has suitable research conditions (pure forest, older trees, any saplings, some gaps in the forest etc.). We will reveal the chemical structures of the volatile components of sweetgum tree. We will also research the conditions (contents, intra-day temperature and seasonal changes etc.) of the chemical compounds of sweetgum tree. During those experiments, we will collect sweetgum leaves, oils, barks etc. in different time frames and analyze their volatile components with using some organic chemistry tools.*

Progress: We are continuing the field trips and experiments. We will finished the laboratory works and write a short communication about the results at the end of 2016 winter. Short Communication Report will be presented in our Final Report.



Our aroma therapy forest experiments aim to detect the chemical properties of the sweetgum forests. The results will be used in the establishment of sweetgum forests as aroma therapy forest.

4. **Poster, Short Movie & Viral Advertisement Making and Delivering:** *Younger local people less know about the importance of sweetgum forests, thus they aren't motivated to protect the forests. That's why, we will collect data related with environmental history belong to sweetgum forest. Then we will prepare a poster, short film and viral advertisement which will include the material and moral worthies of sweetgum forests, especially for elementary & high schools, and university departments in Mugla.*

Progress: We finished our animation-short film for youths at the end of November. We published it on Youtube (<https://www.youtube.com/watch?v=9KFNOiglCsg>) and distributed to our social media groups, the public institutions, schools, NGOs and other related stakeholders. We will give the ratings on the Final Report.

5. **Lobbying & Communication:** *We will follow a lobbying & communication strategy, related with disseminate to applying of corridor methodology, Sweetgum Oil Action Plan and monitoring the key wildlife species. Also we will communicate with local ecotourism sectors and local youths during the second edition.*

Progress: We regularly share our project's progressive information reports to General Directorate of Natural Heritage Conservation (GDNHC), General Directorate of Nature Conservation and National Parks, General Directorate of Forestry, Mugla Regional Directorate of Forestry, Rectorate of Mugla University, District Governorate of Koycegiz, Municipality of Koycegiz, Municipality of Marmaris, Metropol Municipality of Mugla, Koycegiz Forestry Department, Fethiye Forestry Department and Marmaris National Parks Department.

We lead to found a **Sweetgum Working Group** after Sweetgum Workshop which was held on Marmaris-Turkey in between 14-15 November 2015. Working Group consists of Mugla Sitki Koçman University, Mugla Regional Forestry Department, Marmaris National Parks Department, Metropolitan Municipality of Mugla, Municipality of Marmaris District, Mugla Regional Directorate of Water Affairs, Mugla Regional Directorate of Health Affairs, Marmaris City Council and some local and national nature conservation NGOs. Sweetgum Working Group aims to follow and apply our Sweetgum Action Plan during 2016. The first meeting had been done in December 19, 2015 in Marmaris National Park.



Sweetgum Working Group's first meeting had been done in December 19, 2015 in Marmaris National Park.



As the working group, we controlled the new walking road on the sweetgum forests in Marmaris National Park after the first meeting.

We've started to baseline surveys for our next year conservation efforts. We are planning to purchase of lands that are suitable for corridors. We are looking for the best places, best prices and searching legal processes (land's freehold transferring to a NGO, land's plantation, rehabilitation and conservation issues with Forestry Departments etc.) for on creating proprietary in sweetgum forest conservation.

We've also found a new association (titled **NATURA Society For The Conservation Of Nature & Culture**) for this aim and also sustain our efforts. Now NATURA is a member of Sweetgum Working Group and looking for suitable donation campaigns and project donors. Honestly we can say that NATURA will be the most important output of this project.



NATURA aims to creating proprietary in sweetgum forest conservation and sustain our conservation efforts. NATURA also is a new member of Sweetgum Working Group.

6. Sweetgum Plantation Festivals: *We will continue "The Festivals" which will be done in another pilot corridor area where we will decide together with Koycegiz and Fethiye Forestry Departments. We will plant nearly 4,000 sweetgum saplings in this event with elementary & high school, and university students.*

Progress: We did 3 sweetgum plantation festivals until today. One of them was done in Koycegiz within the World Forest Week in March 24, 2015. About 200 students (elementary, high school and university degree) had attended to the first festival. Nearly 2000 sweetgum saplings were planted during the festival. The festival took place in the press with 4 National and 20 Local news. Also during the festival we gave 1 regional interview.

The second festival had been done in Fethiye District in April 2, 2015. Before the festival we gave a seminar about the sweetgum forests to the students of Fethiye Vocational School (Mugla University). About 100 students from Fethiye Vocational School's Environmental Protection Department had attended to the second festival. Nearly 1000 sweetgum saplings were planted during the festival. The festival took place in the press with 1 national and 8 local news. Also during the festival we gave 2 regional and 1 national interviews. National interview was published on TRT Haber (Official State Channel in Turkey) that is the biggest news channel in Turkey and reached to the millions of Turkish people.

Our third festival was held in Marmaris District in April 15, 2015 following the Sweetgum Workshop which was held in Marmaris in between 14-15 November 2015. Nearly 100 local people and youths attended to this festival. Because of the weather conditions we couldn't plant sweetgum saplings. Instead of plant sapling, we made a nature education tour and trekking inside of the sweetgum forests in Marmaris District. In that event, we also visited to old-traditional sweetgum oil producing facilities to show the locals their current situation.



We made a nature education tour and trekking inside of the sweetgum forests in Marmaris District.



We also visited to old-traditional sweetgum oil producing facilities to show the locals their current situation.

Also during the third festival we gave 3 regional and 1 national interviews.



National interview was published on TRT News and TRT-1 (Official State Channel in Turkey) that is the biggest news channel in Turkey and reached to the millions of Turkish people.

7. Meeting, Reporting & Preparing of Scientific Papers: *Except of interim and final reports, we will write technical reports to Departments of Forestry & Conservation. Suitable data will be integrated to articles for international journals. We will prepare publications for popular-science-magazines in Turkey. We will also attend to the scientifically organizations to raise the awareness.*

Progress: We gave an oral presentation about the results of our current project's two most important research topics (species distribution and wild life situations) in an ecology congress which was held on Mugla University (which is the closest university to the sweetgum forests) in between 14-17 September, 2015. Oral presentation titled ***"A current assessment about Anatolian Sweetgum Forests' (Liquidambar orientalis Mill.) bio-ecological situations and its' wild life properties"***.

We gave four special speeches for ***"Sweetgum Workshop"*** which was held in Marmaris-Mugla (where is the 3rd important sweetgum forest region), in between 14 and 15 November, 2015. The Workshop had been organized by Municipality of Marmaris and Marmaris City Council's Environment Working Group. The workshop had been focused to biodiversity, socio-economic, cultural and historical importance of Anatolian Sweetgum Forests. We gave 4 different speeches (1-current situation of sweetgum forests-what to do, 2-wild life properties of the sweetgum forests, 3-sweetgum forests within the concept of the social sciences, 4-potentials of sweetgum forests as aroma therapy).



We gave 4 different speeches during the Sweetgum Workshop.

In November 26, 2015 in Ankara (the capital of Turkey) we gave an interview for 'TRT Radio' which is the biggest radio channel in Turkey and reached to the millions of Turkish People. During the interview, we gave information about our project results such as Anatolian Sweetgum Forests' current bio-ecological situations, wild life properties, material&moral values and how can we conserve them via citizen supports.



The one hour interview reached to the millions of Turkish People.

By the way, we have the pleasure to inform that our proposal titled as *Reviving Oriental Sweetgum Forest in Southwestern Turkey Using Corridor Method and Community Understanding in the Context of the Environmental Ethics* has been accepted as a Poster for the next **IUCN World Conservation Congress** which will be held in Hawaii, in September 2016.