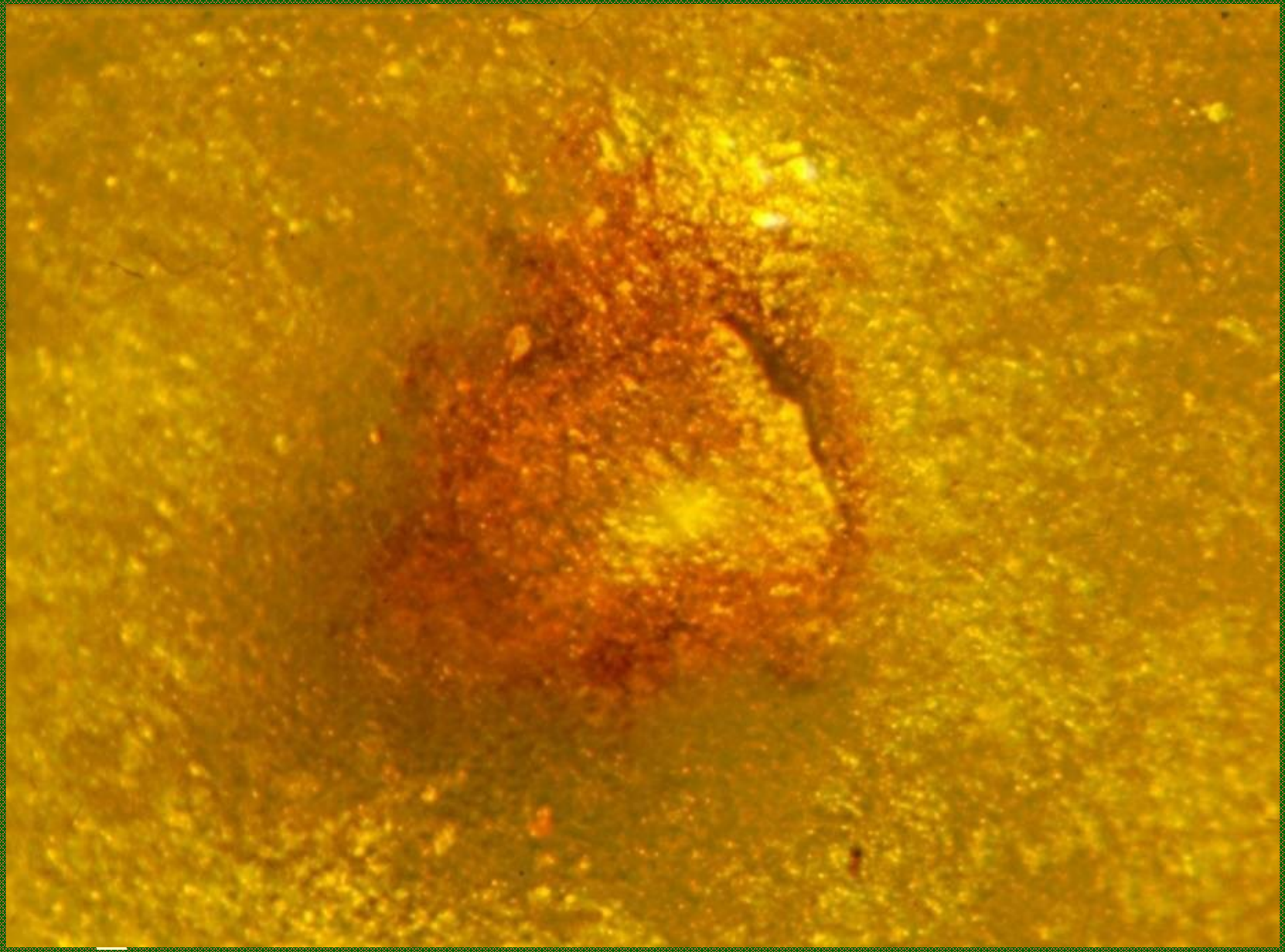
The Hellenic National Area Wide Control Project (NAWCP) against the olive fly

Dimitrios Stavridis

Directorate of Rural Economy
and Veterinary Services
of the Regional Unit of Larissa

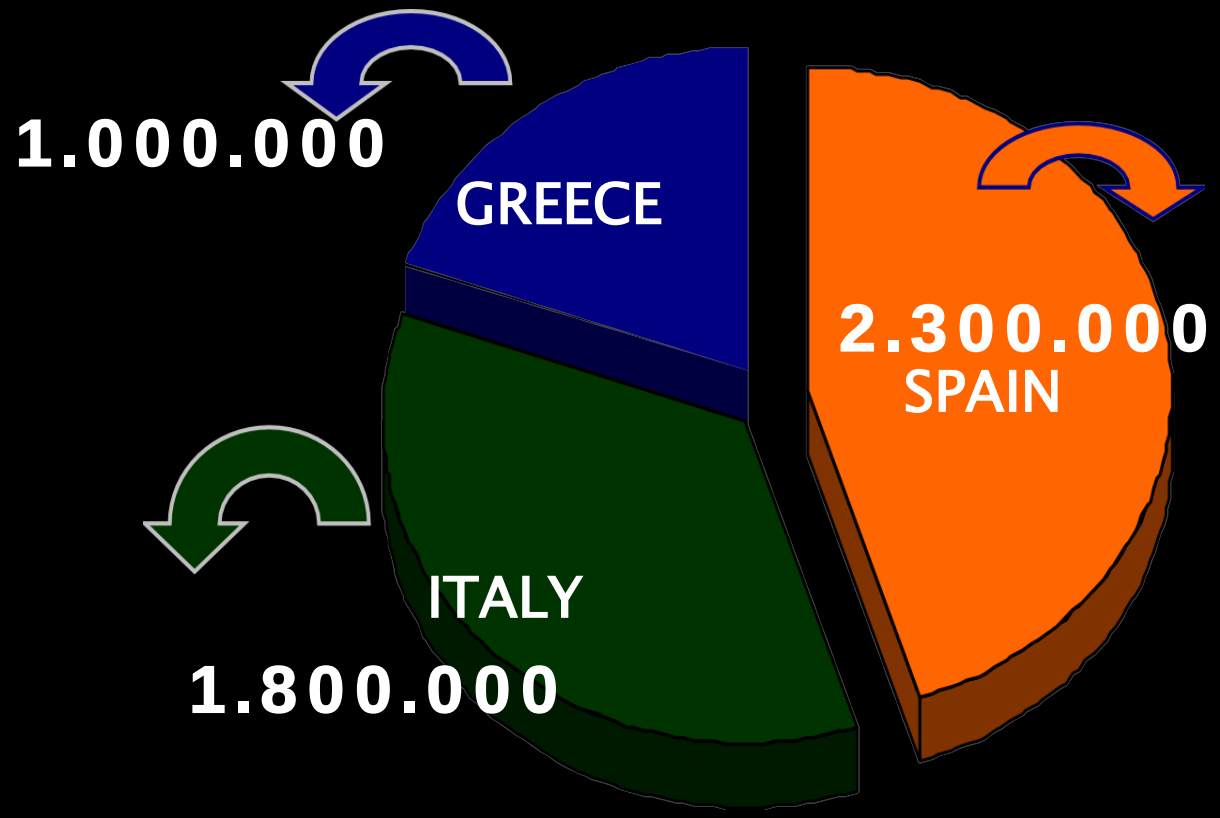
Olive fly (*Bactrocera oleae*) - OLF



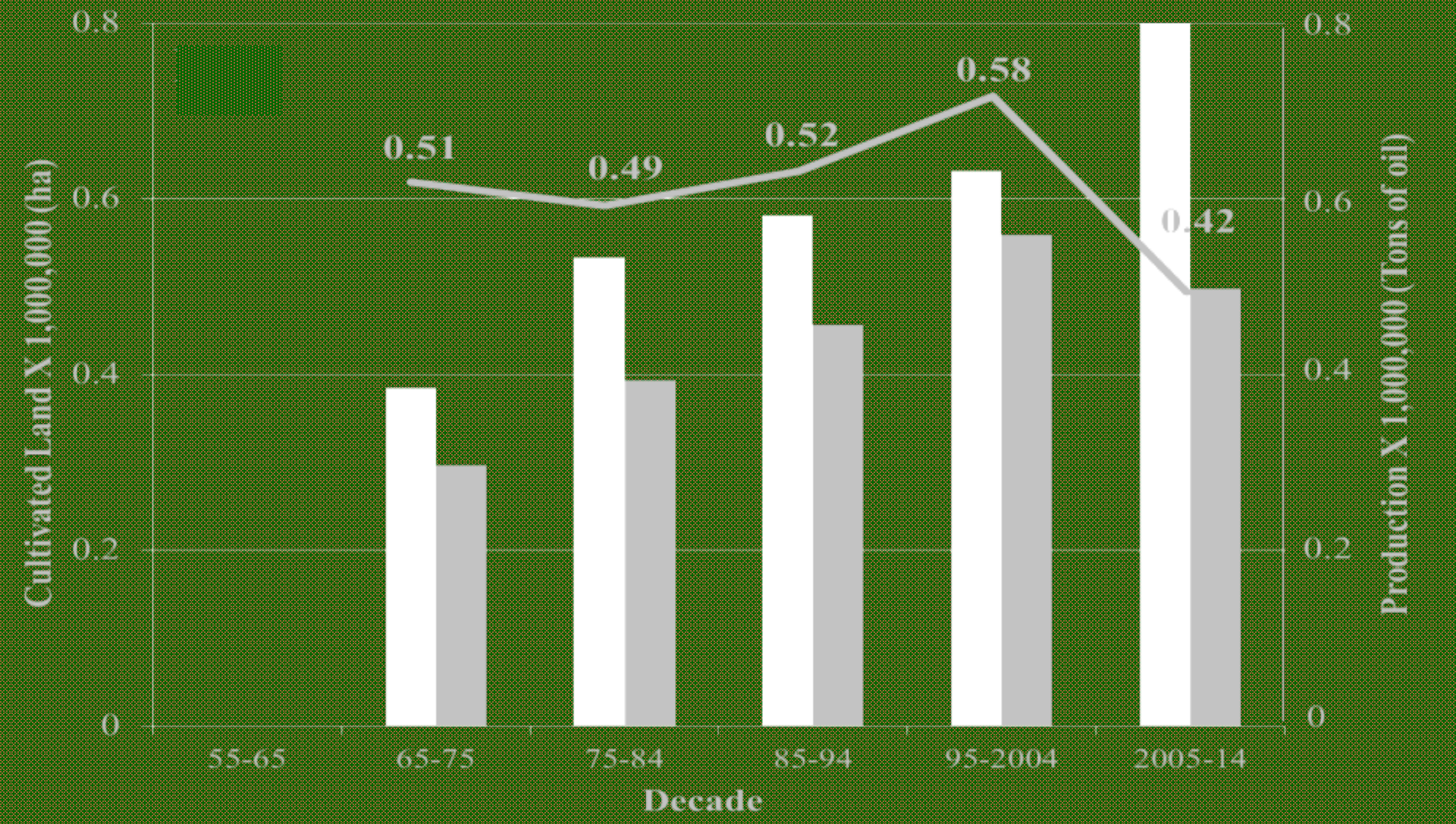
Cultivated Olive Tree Area (ha)

- 10.000.000 ha (in all over the world)
- 9.800.000 ha (in Mediterranean countries)

Cultivated Olive Tree Area (ha)



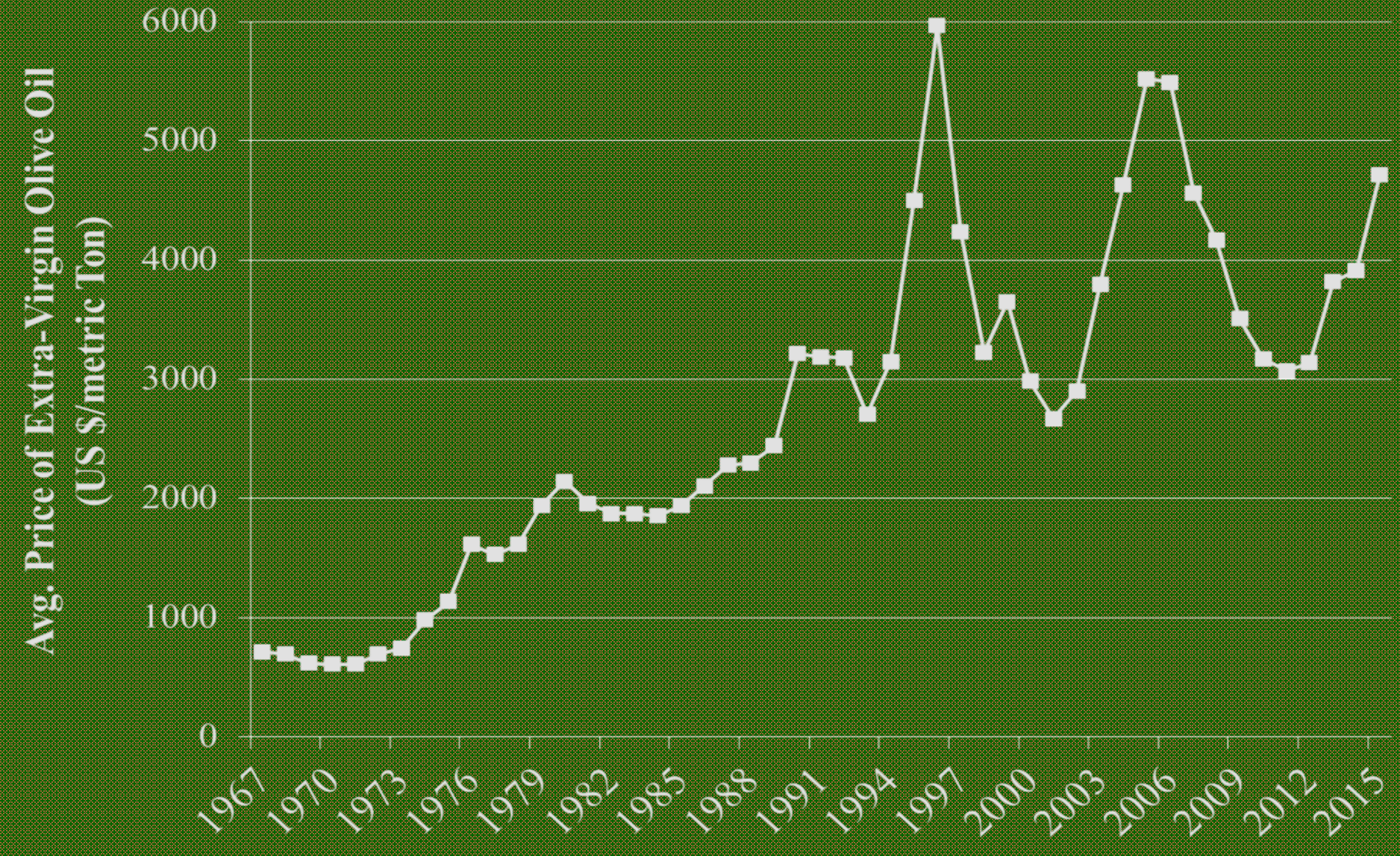
Changes in cultivated land and olive production in Greece



Production

Olive Oil (tn)	Olive fruit (tn)
260.000	50.000
350.000	130.000

International prices of extra virgin olive oil in the international market



Economic significance of OLF

- **Olive crop acreage**: 1th rank the recent years
- **Virgin olive oil exports**: 7th rank (300 million €)
- Quantitative and qualitative degradation of yield
- Losses on average **40-50%** of the total yield
- **5-15%** in Greece, where a National Area Wide Control Program (NAWCP) is established since 1953

Damages

- Quantitative
  - Destruction olive mesocarp
  - Premature fruit drop before harvest
- Qualitative
  - Increasing oil acidity
  - Deteriorating of organoleptic properties

Cultivated Olive Orchards NAWCP

621.150 Area (ha)

13.656.738 Olive trees

NAWCP

- **Coordination and monitoring:** Ministry of Rural Development and Food
- **Implementation:** Directorates of Rural Economy and Veterinary (Regions of Greece)
- **Prerequisite for an area to be included in the program:** Percentage of fruition of a total yield up to 20% for table olive cultivars and 25% for olive oil cultivars

Trapping

Type of traps: McPhail (glassy) with aqueous solution of sulphate ammonium 2%

Traps density: 1 trap / 2.000 olive trees or 1 trap / 1.000 olive trees in areas with “traditionally” high population of OLF

Monitoring: Every 5 days in combination with solution changing

Sprayings

- T > 28°C (in shadow)
- R.H. < 25%
- While raining
- Forecast for rain

Control method: Ground bait sprays

Sprayings:

NORMAL DENSITY: Every second olive tree

THIN DENSITY: All olive trees

Time of spraying

- **Population density:** Up to 5 individuals / trap in five-day period
- **Population composition:** $\frac{\text{Females}}{\text{Males}} > 1$
- **Percentage of fecund females**: Up to 5%
- **Average weight of olive fruit**: Up to 0,20 gr (beginning of core's hardening)
- **Favorable climatic conditions** (Temperature, Humidity)

Used Insecticides

Insecticides	Pre-Harvest Interval (PHI) in days
alpha - cypermethrin	7
l- cyhalothrin	7
beta- cyfluthrin	14
deltamethrin	7
dimethoate	28
spinosad	14
thiacloprid	14


72-86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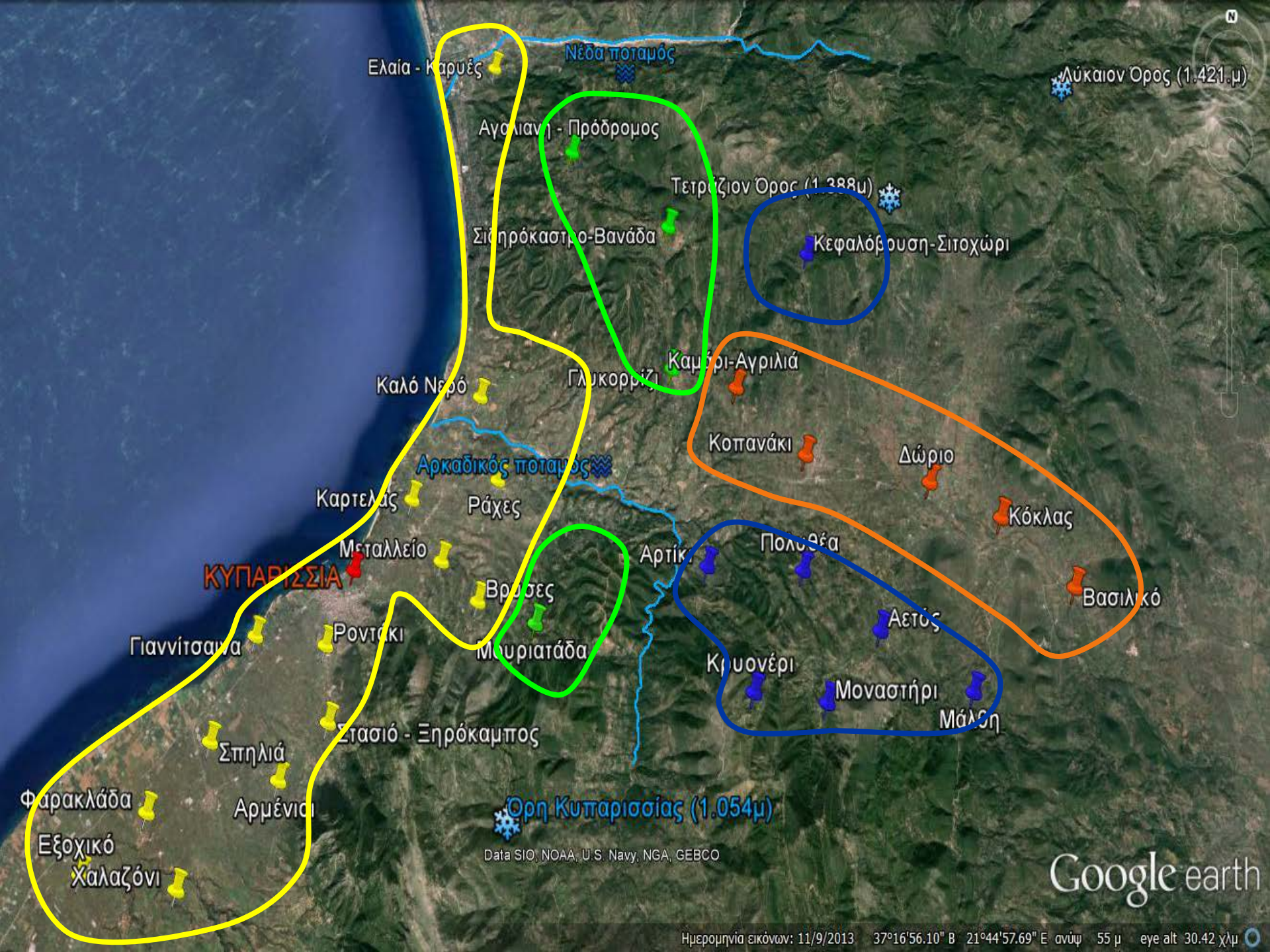
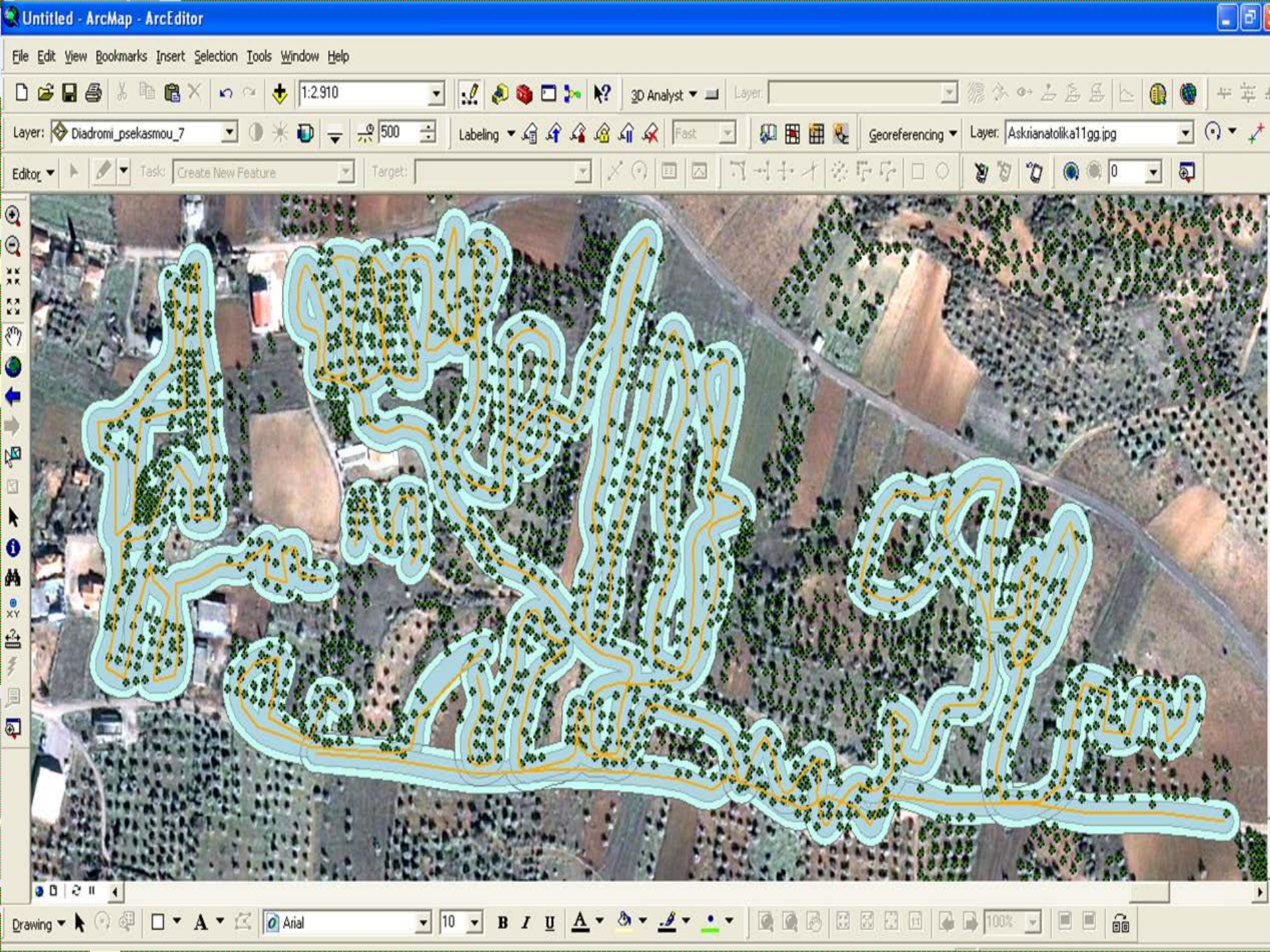

Ελαία - Καρυές
Νέδα ποταμός
Λύκαιον Όρος (1.421μ)
Αγκλιανή - Πρόδρομος
Τετράζιον Όρος (1.388μ)
Σιδηρόκαστρο-Βανάδα
Κεφαλόβρυση-Σιτοχώρι
Καλό Νερό
Γλυκορρίζι
Καμάρι-Αγριλιά
Κοπανάκι
Δώριο
Κόκλας
Αρκαδικός ποταμός
Καρτελάς
Ράχες
Μεταλλείο
ΚΥΠΑΡΙΣΣΙΑ
Αρτίκι
Πολυθέα
Βασιλικό
Βρύσες
Αετός
Γιαννίτσαινα
Ροντάκι
Μουριατάδα
Κρυονέρι
Μοναστήρι
Μάλθη
Στασιό - Ξηρόκαμπος
Σπηλιά
Φαρακλάδα
Αρμένια
Όρη Κυπαρισσίας (1.054μ)
Εξοχικό
Χαλαζόνι
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Google earth
Ημερομηνία εικόνων: 11/9/2013 37°16'56.10" Β 21°44'57.69" Ε ανύψ 55 μ eye alt 30.42 χλμ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Problems

- Sort-time action of baits
- Dispersed organic olive orchards
- Bureaucratic procedures in order to hire the essential staff and the public competition

Economic Evaluation of the Program

Cost:

24.000.000 - 34.000.000 €

Benefit:

480.000.000 – 620.000.000 €

Remarks

- General tendency for a population increase during autumn months, where temperature becomes milder and humidity higher
- Substantial effects of the last year olive fruit yield on population density over the subsequent year
- Alternation of insecticide used

Conclusions

- A generally successful implementation of the National Area Wide Management Program towards keeping population density under Economic Inquiry Level
- Reconsidering the administrating structure of the project
- Expand organic olive grow in isolated areas
- New alternative trapping systems

Thank you