DOÑANA

PERIOD 2014-2020
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CLOSING ILLEGAL WELLS HAS NOT REDUCED THE IRRIGATED AREA IN DOÑANA

INTRODUCTION

Over the past thirty years, berries crops grown under plastic (strawberries, blueberries, raspberries and blackberries) have proliferated on the sandy soils of Huelva in the surroundings of Doñana, severely impacting the quality and quantity of water available to the wetlands in the Doñana Natural Area.

To try to solve the problem with the use of soil and water, the Andalusian Regional Government (Junta de Andalucía) developed the *Doñana Land Use Plan* (Plan de Ordenación Territorial del Ámbito de Doñana; POTAD), which came into force in February 2004, and, subsequently, the **Special Management Plan for the Irrigation Zones located to the North of the Doñana Forest Crown** (Plan Especial de Ordenación de las zonas de regadíos ubicadas al norte de la corona forestal de Doñana), officially approved in December 2014 (hereinafter, Special Plan), also known as the "Strawberry Plan" (Plan de la Fresa).

Both plans (POTAD and the Special Plan) emphasise the importance of regularising the irrigated area considered "irrigable agricultural land", as well as other actions, including the closure of illegal abstractions and the elimination of irrigated areas not considered irrigable agricultural land (illegal and non-legalised crops).

The WWF considers that, in recent years, the Guadalquivir River Basin Authority has made a significant effort to close illegal wells in Doñana, despite the coercion and aggression suffered by the water rangers and opposition from the illegal farmers, with demonstrations such as the one that took place in the summer of 2019, when they tried to forcefully prevent the closure of 77 illegal wells ordered by the High Court of Justice of Andalusia (Tribunal Superior de Justicia de Andalucía; TSJA) in a ruling that condemned the Lucena del Puerto Town Council (https://www.huelvainformacion.es/provincia/CHG-consuma-agricolas-Lucena-Puerto_0_1378962273.html) and which had to be executed subsidiarity by the Guadalquivir River Basin Authority in the face of inaction by the local authorities.

However, as the WWF data shows, this effort made by the administration of the national river basin Authority has had no effect on the surface area irrigated with water from the Doñana aquifer. The report "Doñana Under Plastic"

(Doñana Bajo Plástico), published by the WWF in 2019, used telemetric data to show that the irrigated surface area had increased yet again. (https://d80g3k8vowjyp.cloudfront.net/downloads/donana_bajo_plastico.pdf?51960/Donana-bajo-plastico-avanza-la-invasion-de-los-frutos-rojos).

PURPOSE OF THE REPORT

As we have already mentioned, previous reports by the WWF have demonstrated that the irrigated zone in the Doñana area in Huelva has not stopped growing, despite the plans and measures put in place by the authorities.

This is why we have decided to analyse a specific municipality, Lucena del Puerto, where more than 100 water abstraction sites have been closed since the approval of the Special Plan in 2014. This analysis is aimed at determining whether the closure of these wells has led to a reduction in the number of irrigated hectares, which in theory would mean a reduction in the water extracted from the aquifer and an improvement in its condition at the local level.

PRESENTATION OF RESULTS

WWF Spain has analysed the area cultivated under plastic in the municipality of Lucena del Puerto between the campaigns 2014-2015 and 2019-2020, including important milestones and the extent of crops under plastic that existed at any given time.

Period/campaign	Cultivated area (hectares)	Milestone
2014-2015 campaign	1462.5 hectares	Approval of the Forest Crown Plan
2018-2019 campaign	1514.9 hectares	Period of illegal well closures in Lucena del Puerto following the TSJA ruling
2019-2020 campaign	1507.3 hectares	First agricultural campaign after the well closures

Table 1. Irrigation campaigns, surface area and comments. Source: WWF Spain

As indicated in Table 1, the area of crops under plastic beyond the irrigable agricultural soils in the municipality of Lucena del Puerto remained the same throughout the 2018/2019 and 2019/2020 growing seasons, with no significant decrease resulting from the closure of 77 wells and several ponds in the summer of 2019. We will analyse this data in detail later on.

2014-2015 campaign

During this important period, the Andalusian Regional Government officially approved the Special Forest Crown Plan for Doñana. In this regard, WWF Spain has analysed the Landsat image of 8 March, 2015, by analysing the infrared colour composition (medium infrared, near infrared and blue bands), a method accepted by the European Union in various procedures. **The irrigated area in Lucena del Puerto in March 2015 was 1462.5 hectares.**

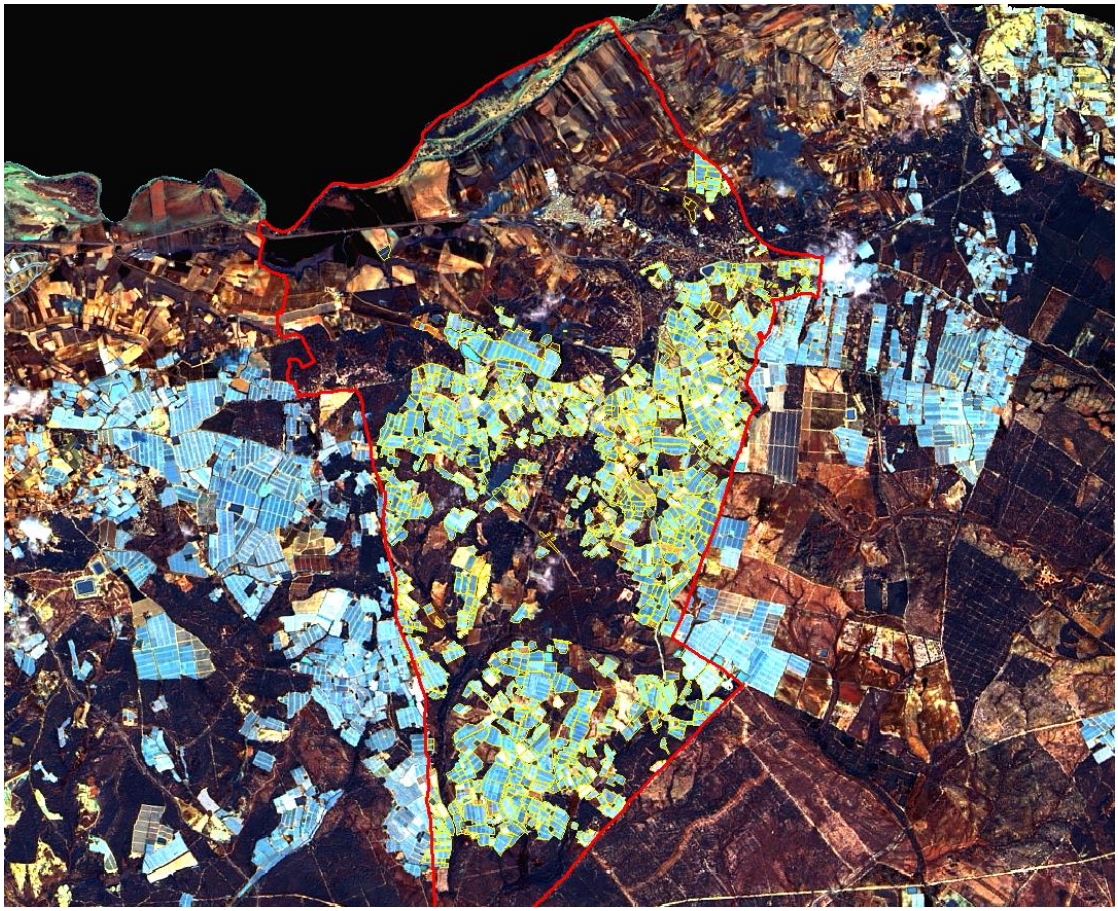

Figure 1. Crops under plastic in March 2015. Source: Landsat and in-house

As can be seen in Figure 1, in red is the boundary of the Lucena del Puerto municipality, and yellow delimits the plots of crops under plastic (dark blue and grey tones).

2018-2019 campaign

This figure comes from an image taken by the Sentinel 2 satellite on 3 March, 2019, during the peak period of strawberry production, so the image is taken on an appropriate date for ensuring cultivation is taking place under plastic. At this time, we are looking at the agricultural campaign immediately prior to the closure of illegal wells in the summer of 2019, so this is a good image for ascertaining the number of hectares under cultivation in the campaigns before and after the action of the River Basin Authority and can therefore give us an indication of the impact this action has had on the irrigated area in Lucena del Puerto.

The image shown in Figure 2 shows an infrared composition (bands of near infrared, red and green), where red shows the boundary of the Lucena del Puerto municipality, and yellow shows the plots of crops under plastic. The crops under plastic are in shades of purple, white and dark grey. **The irrigated area in March 2019 was 1514.9 hectares.**

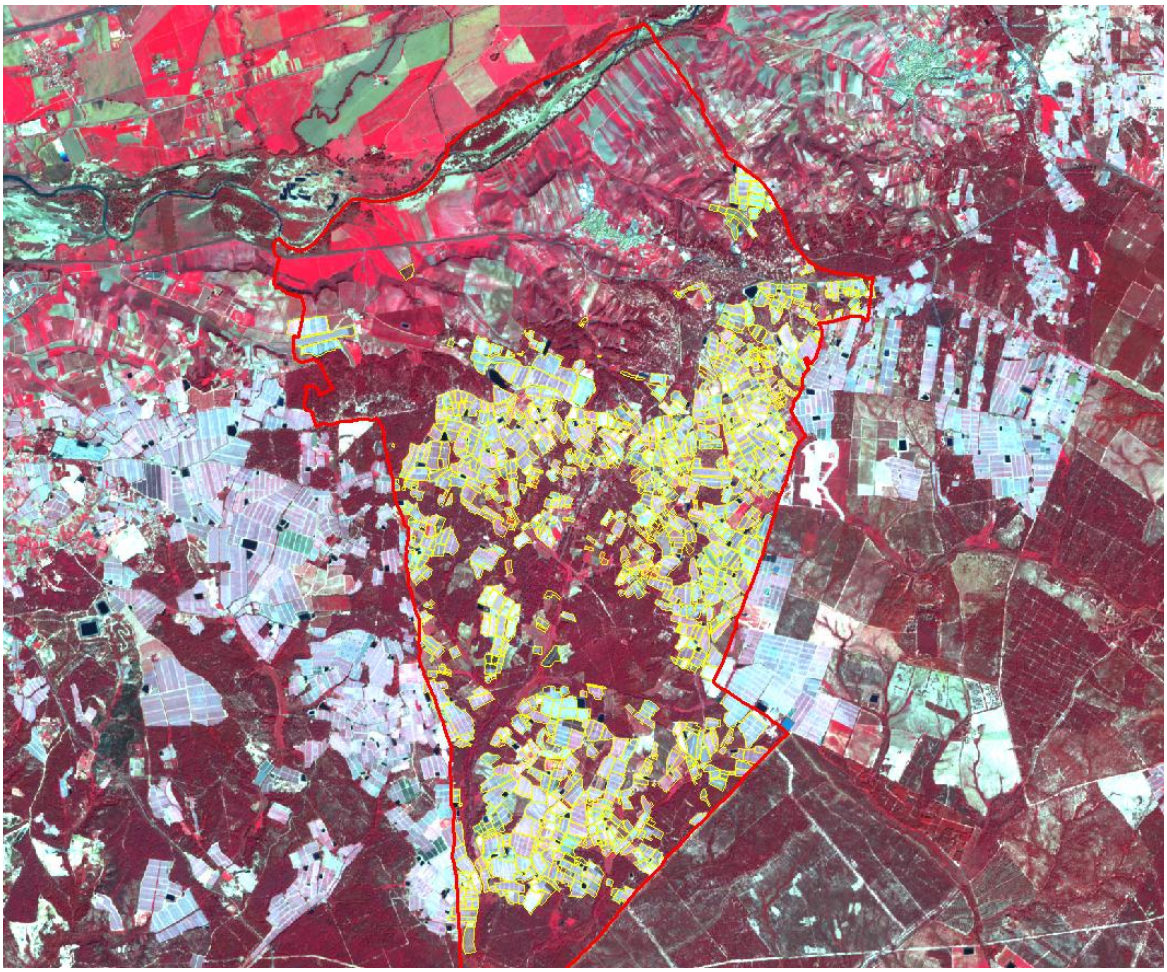

Figure 2. Crops under plastic in March 2019. Source: Sentinel; WWF Spain

2019-2020 campaign

Figure 3 comes from an image taken by the Sentinel 2 satellite on 7 March, 2020, during the peak period of strawberry production, so the image is taken on an appropriate date for ensuring cultivation is taking place under plastic. March 2020 is the key date for determining whether the closure of wells the previous summer had had any effect on the closure or elimination of irrigated land.

The image in Figure 2 shows an infrared composition (near infrared bands, red and green), where the Sentinel 2 image from March 2020 appears in red. The figure shows an infrared composition (bands of near infrared, red and green), where red shows the boundary of the Lucena del Puerto municipality, and yellow shows the plots of crops under plastic. The crops under plastic are in shades of purple, white and dark grey. **The irrigated area in March 2020 was 1507.3 hectares.**

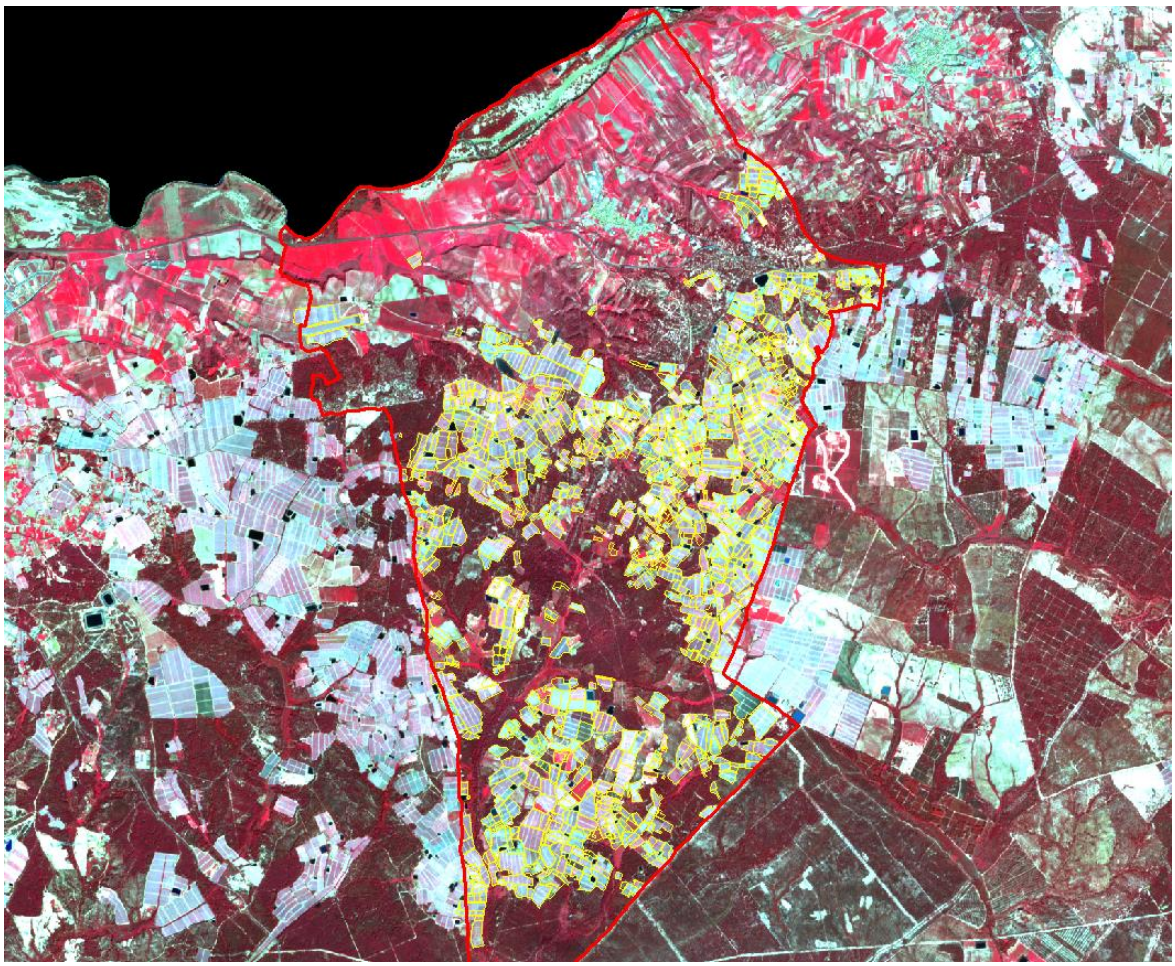

Figure 3. Crops under plastic in March 2020. Source: Landsat and WWF Spain

The sequence of areas shown in Figures 1, 2, and 3 leaves no room for doubt, the irrigated surface area has not decreased despite the closure of illegal wells.

SPECIFIC CASE OF THE HEADWATERS OF THE ROCINA STREAM: WELL CLOSURE ZONE

However, in addition to analysing the general situation, WWF has also analysed the images of the specific area where the River Basin Authority closed illegal wells in the summer of 2019, in order to ascertain whether the number of cultivated hectares has decreased, a logical consequence of the elimination of illegal water abstractions. In this section we present the study performed, with a series of figures indicating the location of the eliminated abstractions and the state of the plots where these were situated, in order to establish whether they are still being irrigated or not.

In the following figures (4, 5 and 6) the municipal boundary of Lucena del Puerto is marked in red, the boundaries of the plots of crops under plastic in Lucena del Puerto on the specific date of each image (2015, 2019 and 2020) are marked in yellow, and the irrigable agricultural soils according to the Special Forest Crown Plan are shaded in orange. **Consequently, all the plots marked in yellow that are not shaded in orange are irrigated farms that have no permit for irrigation and which have not been eliminated.**

Likewise, the white dots correspond to abstractions/wells that were present in the first two figures, corresponding to March 2015 and 2019, but which were decommissioned in the summer of 2019 and in March 2020 appear as closed and not in use.

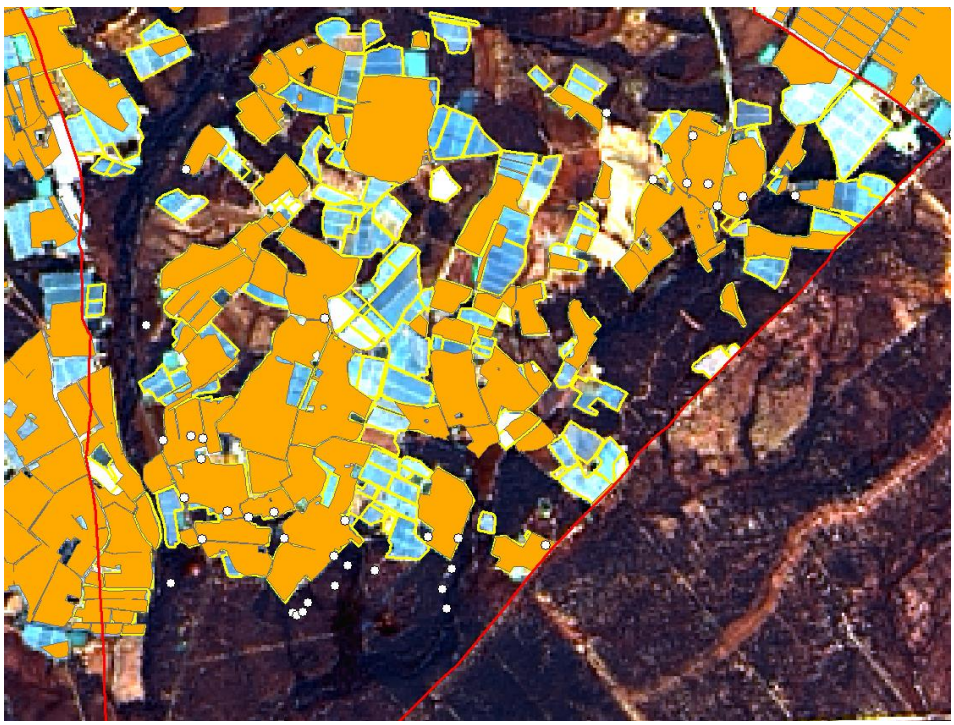

Figure 4. Crops under plastic in March 2015, with existing wells. Source: Landsat and WWF Spain

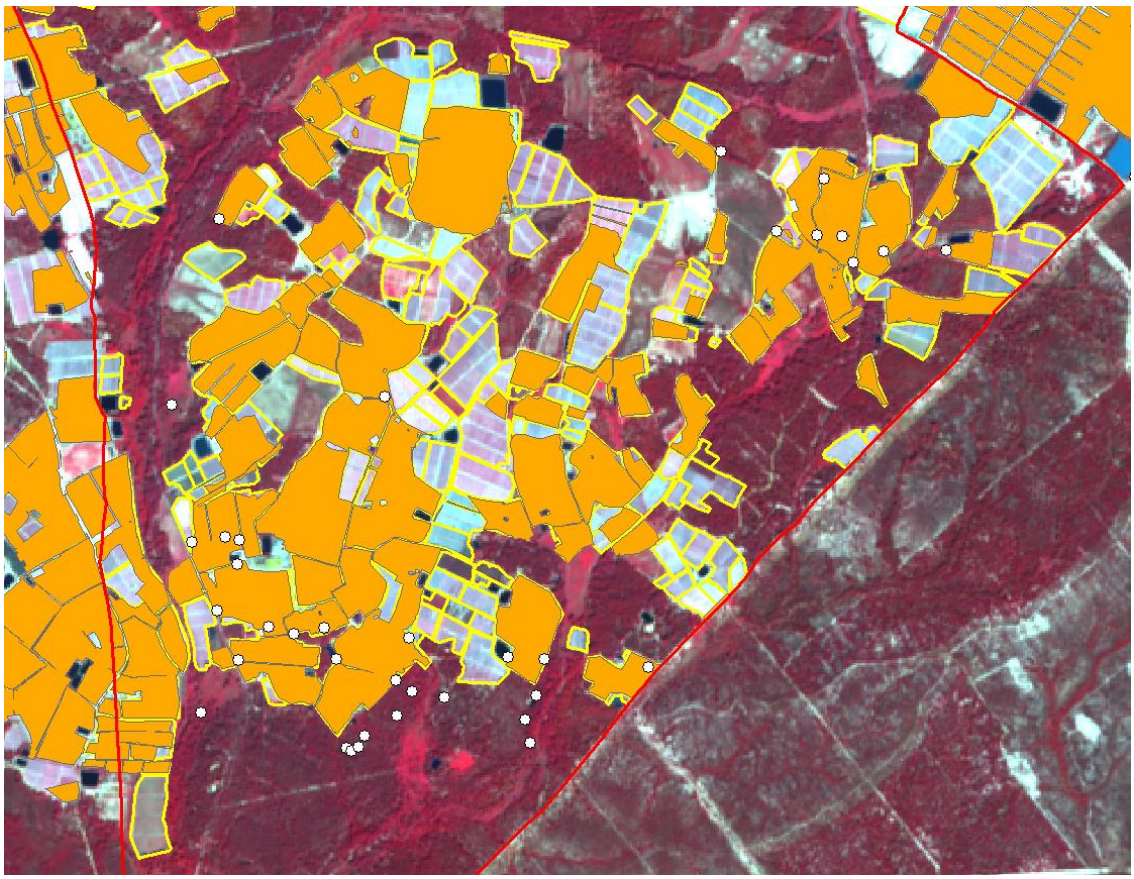

Figure 5. Crops under plastic in March 2019, with existing wells Source: Sentinel and WWF Spain

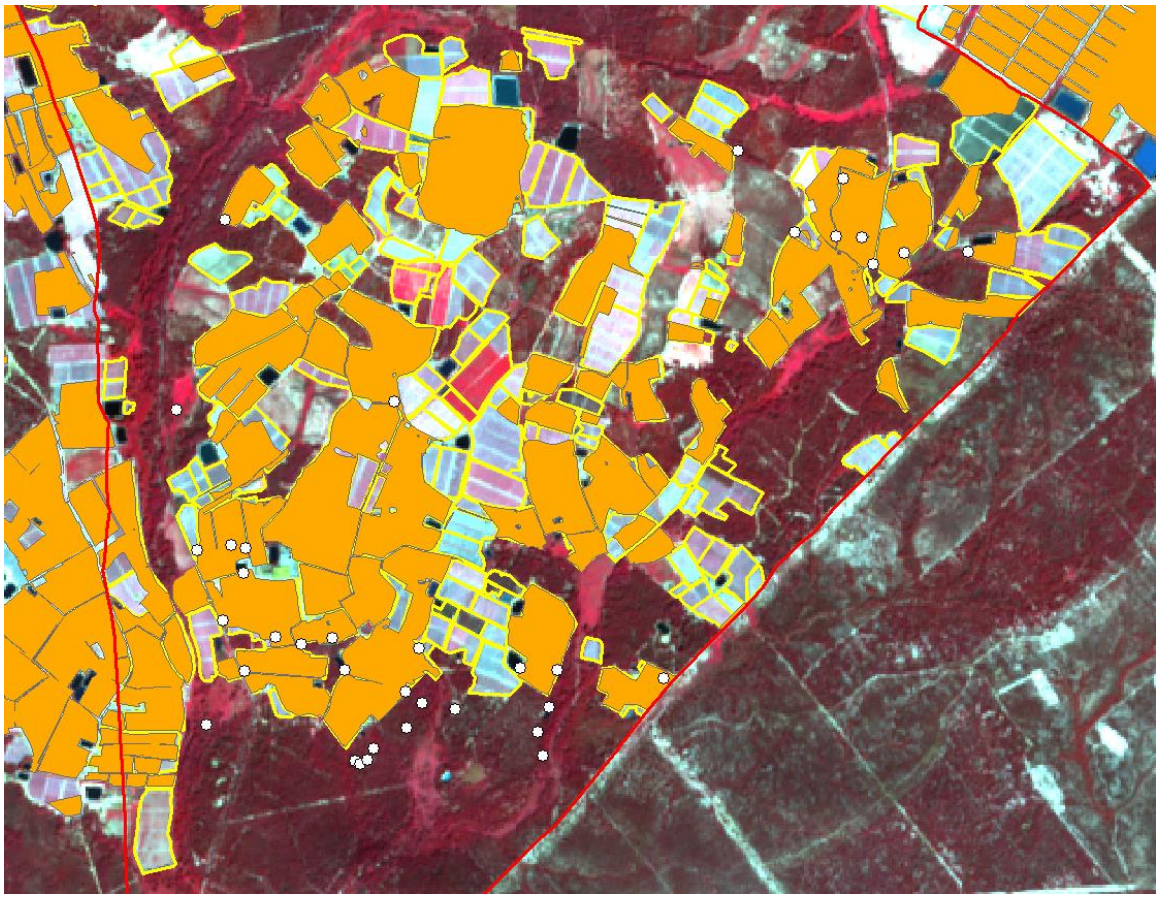

Figure 6 Crops under plastic in March 2020, with closed wells. Source: Sentinel and WWF Spain

CONCLUSIONS

1. From all the information contained in this report, it can be seen in detail that, despite the closure of illegal abstraction sites in Lucena del Puerto, **the surface area under irrigation has not diminished, meaning that not only has the pressure on the aquifer not decreased, but since 2014 it has actually increased**.

2. The mesures taken by the competent authorities from 2014 to date are clearly insufficient to solve this problem. Although illegal wells have been closed, the illegal farms continue to operate year after year, and their impact on Doñana's water resources is more than evident. Furthermore, by prolonging this situation, the idea is being conveyed that with the possible arrival of surface water through an inter-basin transfer, all this illegal area that has not been eliminated could be regularised.

3. The lack of joint action between the Ministry for Ecological Transition and the Demographic Challenge (responsible for water in the Guadalquivir) and the Andalusian Regional Government (responsible for land management), and, in particular, the total lack of action by the latter, has meant that the closure of wells has proved completely useless in terms of controlling the area of illegal intensive crops.

REQUESTS

1. The Andalusian Regional Government must ensure that, as stated in the Action Plan of the Special Forest Crown Plan, the unpermitted irrigated area is eliminated immediately.

2. The Guadalquivir Hydrographic Authority, by virtue of the declaration of the mass at risk of not reaching the good quantitative status that it made in September 2020, must establish, prior to the beginning of the next agricultural campaign, a system of preventative seals for the water sources that supply the irrigated properties without permission, so that during campaign 2020-2021 no illegal crops can be irrigated and the problem for the aquifer is not exacerbated.

3. The Andalusian Regional Government must ensure that the plots of land beyond the irrigable agricultural areas receive no public subsidies or aid linked to irrigation (modernisation, agri-environment and climate, etc.) or marketing (OPFH -OPFH Organización de Productores de Frutas y Hortalizas; Organisation of Fruit and Vegetable Producers).

Further information

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