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T-PVS/Files (2012) 16

CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Standing Committee

32nd meeting
Strasbourg, 27-30 November 2012

Specific Site - File open

**Wind farms in Balchik and Kaliakra –Via Pontica
(Bulgaria)**

REPORT BY THE NGO

*Document prepared by
the Bulgarian Society for the Protection of Birds / BirdLife Bulgaria,
the Royal Society for the Protection of Birds / BirdLife UK*

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- Information provided in October 2012 -

SUMMARY

This document provides a review of the report of the Government on the opened specific site file on windfarms in Balchik and Kaliakra – Via Pontica, Bulgaria - T-PVS/Files (2012) 40, as well as information on the implementation of Recommendation No. 130 (2007) on the windfarms planned near Balchik and Kaliakra, and other wind farm developments on the Via Pontica route, Bulgaria, up to the end of September 2012.

It appears that the Bulgarian authorities are still not making sufficient progress in implementation of most aspects of the Recommendation. The case continues to be at a very critical stage. In addition to the wind farm projects, Balchik and Kaliakra proposed Emerald Network/Natura 2000 sites are being damaged by a large number of other developments, including tourist complexes, golf courses and infrastructure, which are also being planned and consented without proper regard to the nature value of the sites.

In June 2012 the European Commission sent the Bulgarian Government a reasoned opinion (last legal formal warning before possibly taking the Government to the European Court of Justice) because of the lack of adequate protection of Kaliakra Important Bird Area (IBA) – both the approved SPA (Special Protection Area) and the area of the IBA that is excluded from Natura 2000.

Without international intervention, Balchik and Kaliakra Emerald Network/Natura 2000 sites of exceptional value for globally threatened birds and other animals, plants and habitats listed in the Annexes of the Habitats Directive and Appendices of the Bern Convention, could continue to be further damaged – there has already been irreparable damage. Further, other sites of international value along the Northern Black Sea coast have also recently become threatened by wind farm development. This situation is in contravention of Articles 2, 3, 4 and 6(b) of the Convention, as well as Recommendations No. 93 (2002) and No. 108 (2003) of the Standing Committee.

We thus urge the Bern Convention to take further action, as appropriate, to assist Bulgaria to avoid irreversible damage to Europe's natural heritage. Although there have been some positive steps taken by the Bulgarian authorities since the change of government in late 2009, sadly it seems that without further international pressure the Black Sea coast sites will be damaged further.

Most urgently, the NGOs request that the Bureau:

- *Keep the file open and ask the Bulgarian Government for a regular and more detailed progress report on implementation of the recommendation, as well as a clear action plan of activities for implementing the recommendation. A useful step might be that the government report is discussed with the interested parties, including NGOs before submission to the Bern Convention.*
- *Urge the EC, immediately, to progress the general SPA designation infringement against Bulgaria in relation to Kaliakra IBA, as well as the particular infringement case on lack of adequate protection of Kaliakra.*

For a long time the Bulgarian government did not make appropriate efforts to prevent significant impact of wind farm development on the migratory birds along the Via Pontica migration route. This allowed for many wind farm developments to be approved and implemented during the period since the case file is open – 2007 to now. The recent governmental report presents the activities that the Government took, mainly after they received the reasoned opinion sent by the European Commission in relation to the inadequate designation and protection of Kaliakra IBA. Amongst other issues, the European Commission clearly requests the Government to remove the wind farms of “St Nikola” (investor AES), “Kaliakra” (investor Mitsubishi Heavy Industry) and the wind farm owned by EVN. The deadline for an adequate response from the Government was two months and expired at the end of August.

In the document below there is a short review presented of the activities described in the governmental report and in a separate section review is given to how these actions fit into the recommendation 130 (2007).

I. REVIEW OF THE GOVERNMENTAL REPORT TO THE BERN CONVENTION STANDING COMMITTEE - T-PVS/Files (2012) 40

1. Strategic planning

The Opinion №1-2/2012 of the Minister of Environment and Water on the Strategic Environmental Assessment of the proposed NAPERES 2011-2020 is a great step forward to improve and regulate the wind farm development in Bulgaria, taking into account such areas of key importance for the biodiversity as the Natura 2000 network, the geographical areas of Dobrudja, Eastern Rhodopi and Burgas region as well as certain areas around a number of Natura 2000 SPAs. However, it comes into force almost two years after the SEA report was submitted to the Ministry and presented for public consultation. During these two years no restrictions or other national scale regulations have been implemented to prevent further large scale developments during the process of consultations and approval.

The Opinion has two very significant elements:

1. it comes into force immediately; and
2. it is in force only for new investment proposals. On those two elements we focus your attention below.

The Bulgarian legislation allows the decision to be implemented immediately except where very important and well justified reasons occur to prevent stopping the execution of the decision. So far we received some information about attempts to have the Opinion №1-2/2012 appealed, but have not found any case with related issues open in the Supreme Administrative Court. Taking into account that some times several months pass between the appeal and setting the court case, we still do not exclude the option that the Opinion may still be appealed. The principal therefore remains that immediate execution of the decision might be rescinded by the Court.

The formulation of the Opinion №1-2/2012 clearly says that it applies only for new investment proposals. The wind turbines that are already approved, but not constructed do not fall under the restrictions. Also, as it is said in the Governmental report T-PVS/Files (2012) 40 “only procedures already started will be completed”, which means that the projects that are under procedure of approval are also out for the restriction of the Opinion №1-2/2012.

According to the Strategic Environmental assessment of the proposed NAPERES 2011-2020, at the time when the restrictions for the geographical region of Dobrudja were proposed in summer 2010, in total 5028 wind turbines were constructed, approved or planned in the country, where 3113 of them were in the geographical region of Dobrudja.

For the last two years after this restriction had been proposed, nearly 1000 turbines were approved in Dobrudja and more are still under procedure. Some of the decisions for approval of wind farms have been appealed by BSPB, and some of them were returned by the Ministry of Environment and Water for a new decision making procedure in RIEW Varna. Therefore these proposals are outside of the restriction of the Opinion №1-2/2012.

Because of the nearly two-years delay in taking this decision, the problem of overbuilding the geographical area of Dobrudja, along the Via Pontica migration route is still an issue, because it has allowed, in addition to the operational 278 wind turbines now, up to 4000 new ones to be constructed. The delay actually doubled the number of turbines that could be constructed in Dobrudzha. We hope that part of the already approved wind turbines will be not constructed because of the changes in the legislation (see below), but we are not sure how many wind turbines in risky areas could be stopped through the changes in legislation.

Finally, the Opinion №1-2/2012 does not solve (and it can't) the problem with existing harmful development in Kaliakra IBA.

2. Changes in environmental legislation

According to the changes in the Environmental Protection Law and the Biodiversity Law, as explained in the Government report, the consent decisions lose their power after 5 years if the investor has not started construction. These new legal conditions are valid for all the decisions taken due to the implementation of both laws, back-dated from when these changes in the laws came into force, thus also very old decisions could be decreed as non-valid due to these new requirements. This is therefore also a significant step for solving the problem of hundreds of approved wind turbines since 2005, that are not constructed yet.

An important detail, under these new requirements of both laws, is that the legal text does not automatically rescind the old decision of un-implemented projects. According to the law, the start of the implementation of the investment project, or absence of implementation has to be confirmed through a commission formed by the Director of the RIEW. We do not have any information about further steps taken by the Director of the RIEW Varna to form such a commission and start to investigate which of the given consents are still valid and which are not. In principal, a possibility exists where the investor demonstrates that he started implementation (for instance by preparing ground for initiation of building activities, which is not expensive), just to keep his consent valid. Thus the formation of the relevant commission for checking the validity of decisions needs to be formed as soon as possible.

We hope that this step of the government, if it is fully implemented (with decisions on validity of the given old consents) will ensure a significant proportion of the wind turbines approved so far without EIA, will be fully cancelled from construction. We will follow the review of RIEW Varna very closely until it becomes clear how many turbines will be removed from the list of those approved in Dobrudzja.

Unfortunately this step also does not solve (and it can't) the problem with existing harmful development in Kaliakra IBA.

3. Projects for production of energy from Renewable Sources in Dobrudja Region

We found a big discrepancy between the figures of examined wind turbines by RIEW Varna, published in the Governmental report, those published in the SEA of the proposed NAPERES 2011-2020 and those available to BSPB through information provided by RIEW Varna. Taking into account that BSPB might not obtain information for all the investment proposals, we refer below to the SEA of the proposed NAPERES 2011-2020, upon which the Minister of Environment issued the Opinion №1-2/2012.

From the table below it is well visible that the figures about the examined turbines, provided by different sources are very different, where some time the difference is more than 200 turbines. The total amount of examined wind turbines by RIEW Varna according the information of BSPB is 3928, but RIEW Varna reports for 2900 (nevertheless that the sum of the turbines reported by them is 2996). Because our investigation is based on documents publically available on the RIEW internet site or other official sources we cannot comment where the difference of nearly 1000 wind turbines in Dobrudja comes from. Even the figure of 2900 turbines constructed in Dobrudja is not acceptable for the Via Pontica migration route.

Comparison between the data about the number of wind turbines in Dobrudja provided in the Governmental report and the data provided by other sources

Year	Number of WPG on a national level (Source SEA)	Number of WPG in Dobrudja (Source SEA)	Number of WPG in RIEW Varna area (Source Governmental report)
2003	1	1	374
2004	69	13	
2005	332	194	
2006	483	122	
2007	786	467	320
2008	1020	516	399
2009	2002	904	588
2010		About 1000 (source - SEA and RIEW Varna internet site)	814
2011		about 360 (source -RIEW Varna internet site)	344
2012		339 (approved only during first two monts of 2012)	157

The government report presents that 853 wind turbines are cancelled due to finalised appeal procedures for the period 2007 – 2012. We do not have information about which projects these are. In principal, as a result of the appeal procedure of the Ministry of Environment and Water, the Minister could rescind the related decision of the Director of RIEW, but according to the law, in fact he requires the Director of RIEW to take a new decision which might be positive or negative. Thus if the project is stopped by the Minister, it does not mean necessarily that it is cancelled fully. So it is important that the Ministry provide a list of the rescinded decisions, for which the procedure is completely finalised.

The Governmental report presents a data elaborated by the ECONECT Consortium on the capacity of the country to develop the wind farm sector. It is stated in the report that according to the ECONECT data there is still capacity for new 750 wind turbines to be built. However, the Government report does not explain that the capacity for wind farm development is calculated only on a basis of technical conditions and legal restrictions without taking into account environmental constraints. As such, the capacity for wind farm development in Dobrudja, mentioned in the Government report, is calculated purely on technical and legal requirements and it does not take into account either the Via Pontica migration route, nor other ecological constraints related to the most vulnerable groups of animals – birds and bats. Actually the data mentioned in the government report are an intermediate product of the project that will be used as a base to identify potential areas of conflicts between wind farm development and birds and to make corrections to the potential for wind farm development, which takes into account vulnerability of birds. We therefore advise that this part of the Government report to be not taken into consideration, as a source of correct data taking into biodiversity.

In addition to the information above, we would like to focus your attention on the information, provided by the Government on annulled decision BA-7/2012, mentioned in the Governmental report. We would like to clarify that on March 19 2012, BSPB appealed in front of the Minister of Environment (MoEW) the decision of the Director of RIEW Varna, approving the implementation of the investment proposal for a wind energy park comprising of 95 wind turbines and two substations in the land and the municipality of Shabla Municipality. In the complaint to the Ministry, the BSPB contested the EIA report bringing evidence and statements from RSPB and WWT, a petition by local people of the municipality of Shabla and a statement by hunters from Durankulak and Shabla. The Minister of Environment accepted the reasoned appeal of BSPB and on 06/29/2012 revoked the decision on EIA of the director of Varna Regional Inspectorate. The investor consortium "Wind Energy" appealed the Minister's decision to the Supreme Administrative Court - Sofia. The case court hearing is scheduled for 19.12.2012. The BSPB and Green Balkans were constituted as parties to the case, MoEW as the defendant.

However there is a decision of the Director of RIEW Varna for preliminary implementation of the decision BA-7/2012, which similar to Mitsubishi wind farm at Kaliakra IBA, allows construction to take place irrespective of the court case. Thus, this new investment proposal is as dangerous for the birds in Durankulak SPA, as the wind farms already constructed in Kaliakra IBA and the efforts of the governments so far are not enough to secure the termination of this harmful development.

4. Forthcoming activities

The steps to be taken by the Government seem not to be enough to solve the problems which are the grounds of the opened case file against Bulgaria. Explaining all the facts above it becomes clear that all the development is result of decision made on a high level (Director of RIEW, Minister of Environment and Water, Government), therefore although we welcome its provision, we have doubts that training of experts in RIEW, who do not have decision-making rights will be not enough to solve the problem.

Neither of the defined further steps tackle existing wind farms at Kaliakra IBA, as well as the requirements of the Recommendation 130 (2007) of the Bern Convention, that are not met yet.

II. IMPLEMENTATION OF THE RECOMMENDATION 130 (2007) – STATE OF IMPLEMENTATION

On 30 November 2006 the Bern Convention on European Wildlife and Natural Habitats ‘opened a file’ on wind farm development on the Via Pontica bird migration route along the Bulgarian Black Sea coast. On 29 November 2007 the Bern Convention adopted recommendation 130 (2007) following the on-spot appraisal carried out in 2007, and consideration of updated information on the case.

In the following sections of the report, we first describe the progress on implementation of each aspect of the recommendation and then outline key developments in relation to the wind farm developments at Kaliakra and Balchik.

1. Review relevant decisions, at the local, regional and national level, concerning wind energy plants and ensure that new plants are not built in the region unless Environmental Impact Assessment (EIA) prove they do not have a substantial negative effect on the biological diversity protected under the Convention - EIA reports should be more precise and scientifically sound than those already presented and should formulate independent peer reviewed conclusions;

To date (October 2012) none of the relevant decisions mentioned above have been reviewed, except the approval of the SEA of the NAPERES 2011-2020. Despite the strong restrictions approved these still allow huge numbers of wind turbines to be constructed in Dobrudja. For details see above.

2. Fully reconsider the development of approved windfarm projects in the Balchik and Kaliakra region situated within or nearby sites designated as important bird areas and special areas of conservation;

Despite the fact that the EVN wind farm project was stopped for certain period of time, it was implemented during the winter and now the wind farm is operational in Kaliakra IBA, being the third big wind farm constructed there.

Changes in the Environmental Protection Law and Biodiversity law give legal right to the authorities to reconsider at least part of the decisions taken for construction of wind turbines. So far it is unclear how long the process of reconsidering the decisions will take and how many decisions will be announced as invalid. For details see above.

3. Investigate the possibility of relocating the windfarm projects already under construction as well as the single turbines (whose building is possible without EIA) in order to restore the integrity of sites to be considered as Natura 2000 sites, IBAs, or under other protection status;

According to our information, the Bulgarian authorities have not taken any actions to implement this point and do not plan to implement this recommendation.

4. Select alternative locations for future and not yet operating turbines based on appropriate data (including long-term monitoring of biodiversity) and assessments (e.g. using multicriteria-analysis); key bird areas, potential SPAs, IBAs, intensive bird migration corridors and sites regularly used by large flocks of roosting species such as storks and wintering geese must be avoided by windfarm development;

The Opinion №1-2/2012 of the Minister of Environment and Water on the SEA of the of the NAPERES 2011-2020 prevents new investment projects for wind farms to be examined and approved in the geographical area of Dobrudja and other areas of the country specifically important for birds and other biodiversity. Thus at least on paper the Opinion provides information for alternative solutions for new investment proposals.

However according to our information, the Bulgarian authorities have not taken any actions to implement this point in case of approved but not constructed wind farms in Dobrudja or elsewhere along the Black Sea coast.

5. Assess the impact of the current operating turbines;

The Bulgarian authorities have taken no action to implement this point. So far only investors do monitoring of the two big wind farms in Kaliakra IBA. INOS 1 do not publish the results from their monitoring. AES Geopower have published four years of reports on wintering geese and migration, with data collected before the start of operation of windfarm, during construction and post-construction. INOS 1 company provided reports to RIEW, but their period for reporting expired and results of monitoring are not clear.

AES Geopower provide reports to RIEW. The report from the last autumn migration clearly shows that white storks continue to pass at risky altitudes (below 200 m) through the area of the wind farm, and even huge flocks of storks overnight there. Thus, the park needed to stop quite frequently, but neighbouring wind turbines were not stopped.

Since September 2010 two projects started to be implemented in Coastal Dobrudzha, which include as one of the activities monitoring of impacts of wind turbines on birds. One project is targeted at Red-breasted goose conservation (Financed by EC LIFE+ fund; to be implemented by BSPB) and one national scale project is targeted at elaborating a sensitivity map and guidance in relation to wind farms and birds (financed by Environmental Operational Programme through MoEW; to be implemented by a Bulgarian-Dutch consortium including BSPB and ALTERA). Results from the both studies are expected early next year. Intermediate results show significant displacement effect to the Red-Breasted goose, where the Bern Convention is separately informed.

There is no information about any impact monitoring being carried out at any of the other windfarms in Dobrudzha.

6. Conduct a Strategic Environmental Assessment (SEA) of Bulgaria's wind energy programme, taking into account possible conflicts of wind energy production within the most intensive bird movements areas, in particular along the Black Sea coast;

Since August 2012 the Ministry of Environment and Water met this requirement of the Bern Convention, which is great step forward. However the big delay in taking this decision means a that a large number of wind turbines could still be built in Dobrudja (see above for details)

7. Establish a strict moratorium on further turbines and windfarm projects in the coastal areas of Bulgaria until EIA and SEA reports mentioned in paragraphs 1 and 6 are completed;

This requirement has never been implemented. Because of a lack of a moratorium and the nearly two-year delay for taking the decision, as a result of the Opinion №1-2/2012, despite of the restrictions there, the problem of overbuilding the geographical area of Dobrudja along Via Pontica migration route, is still an issue, because it allows in addition to the operational 278 wind turbines now, up to 4000 new turbines to be constructed. The delay actually doubled the number of turbines that could be constructed in Dobrudzha. We hope that part of the already approved wind turbines will be not

constructed because of the changes in the legislation, but we are not sure how many wind turbines in risky areas could be stopped through the changes in legislation.

8. *Respect the need to focus on the avoidance of the impacts coming from outside having negative effects on areas of recognised conservation importance;*

The Bulgarian authorities have taken no actions to implement this point, except for new renewable energy development in buffer zones around a small number of SPAs, as outlined in the NAPERES 2011-2020.

9. *Take into account the following guidance to improve EIAs for future and not yet operating turbines, including in accordance with “Regulation about the conditions and the order for accomplishment of assessment for compatibility of plans, projects, programmes and investment intentions with the subject and the aims of the conservation of protected zones”:*

- *further research and monitor birds, bats, other fauna, vegetations and key landscape-ecological structures and processes influencing biodiversity; to this end long-term monitoring of flora and fauna, review and validation of all data is required, including those from NGOs, institutes and independent scientists;*
- *apply collision modelling of cumulative effects of several wind farms or turbines along intensive flyways, followed by the assessment of the suitability of localities using multicriteria-analysis methods;*
- *develop compulsory procedures to peer review the completeness and quality of biodiversity chapters of EIAs and their conclusions before continuing the administrative and legal processes;*

Since April 2011 the MoEW initiated the implementation of a project “Mapping and identifying the FCS [Favourable Conservation Status] of habitats and birds Phase I”, with a special section “Birds: **Identification and minimizing the risks for the wild birds**”.

The main goals of the project related to the “Birds” section are:

- An elaborated methodology for monitoring of bird migration prepared and submitted in the Executive Environmental Agency¹ under the Ministry of Environment and Water
- Development of a system for early warning, which will regulate the work of the wind generators
- Development of guidance for conservation of wild birds during wind farm development in Bulgaria
- Development of a map and GIS model with the territories at high risk for birds caused by windfarm development

The minimizing of risks for wild birds is one of the main activities of the project, which aims to identify the most important sites, which are used by the birds on migration for roosting and foraging as well as the main migratory routes in order to ensure their conservation and minimising the risks caused by realisation of **new investment proposals** and projects in these territories.

The duration of the project is approximately 2 years. The project is implemented by a Bulgarian-Dutch consortium including BSPB and ALTERA. Results are expected in March 2013.

10. *Develop guidelines for appropriate planning of the construction of windfarms and/or individual turbines, taking account of the following issues in order to integrate biodiversity conservation concerns:*

- *initiate a broad debate on the precautionary principle regarding development projects in relation to sites with outstanding biodiversity values;*

¹ The Agency is responsible for all kind of monitoring of the environment in the country (air, soil, water, biodiversity, protected areas, Natura 2000)

- *take measures for the removal of turbines in case of unacceptable bird collisions where no alternatives exist; this requires the drafting of a set of mitigating and compensatory measures when biodiversity losses occur;*

The government is planning to create guidelines as part as the project described above. It will be available after March 2013.

- Information provided in March 2012 -

SUMMARY

This document provides information on the implementation of Recommendation No. 130 (2007) on the windfarms planned near Balchik and Kaliakra, and other wind farm developments on the Via Pontica route, Bulgaria, up to the mid of March 2012.

It appears that the Bulgarian authorities are still not making sufficient progress in implementation of most aspects of the Recommendation. The case continues to be at a very critical stage. In addition to the wind farm projects, Balchik and Kaliakra proposed Emerald Network/Natura 2000 sites are being damaged by a large number of other developments, including tourist complexes, golf courses and infrastructure, which are also being planned and consented without proper regard to the nature value of the sites. A number of wind turbines is approved in Dobrudzha, along the Vis Pontica migration route during last several months and more are expected to be approved in the coming month. The consents are given on a base of poor EIAs, that do not examine any alternative solutions by location and do not assess the cumulative impacts. The Strategic Environmental Assessment of the National Plan on Development of Renewable, that requires no further development of the wind farms in Dobrudzha, is not submitted for final approval, nevertheless it has passed all the necessary procedures. This development demonstrates that the Bulgarian Government DO NOT respect the Recommendation No. 130 (2007).

The globally endangered Red-breasted goose appears to be one of the most severely affected bird species due to wind farm development in Bulgarian part of Dobrudzha, where the majority of the entire world population stays during the winter!

At the end of November 2008 the European Commission sent the Bulgarian Government a first warning letter (Letter of Formal Notice) because of the lack of adequate protection of Kaliakra Important Bird Area (IBA) – both the approved SPA (Special Protection Area) and the area of the IBA that is excluded from Natura 2000. Thus the EC opened a second infringement procedure against Bulgaria related to Kaliakra. The first was opened in June 2008 when the Commission sent Bulgaria a first warning letter because of insufficient designation of 6 IBAs as SPAs, including Kaliakra. In late October 2009 the European Commission opened a third infringement procedure against Bulgaria by sending a first warning letter in relation to the huge level of wind farm development along the Black Sea Coast without proper EIA procedures. In September 2011 the Commission sent to Bulgaria further Letter of formal notice to the Government in relation to Wind farms in Kaliakra.

Without international intervention, Balchik and Kaliakra Emerald Network/Natura 2000 sites of exceptional value for globally threatened birds and other animals, plants and habitats listed in the Annexes of the Habitats Directive and Appendices of the Bern Convention, could be further damaged – there has already been irreparable damage. Further, other sites of international value along the Northern Black Sea coast have also recently become threatened by wind farm development. This situation is in contravention of Articles 2, 3, 4 and 6(b) of the Convention, as well as Recommendations No. 93 (2002) and No. 108 (2003) of the Standing Committee.

We thus urge the Bern Convention to take further action, as appropriate, to prevent Bulgaria to cause irreversible damage to Europe's natural heritage. Sadly it seems that without further international pressure the Black Sea coast sites will be damaged further.

Most urgently, the NGOs request that the Bureau:

- *Ask the Bulgaria Government for a progress report on implementation of the recommendation, as well as clear action plan of activities for implementing the recommendation.*
- *To ask Bulgarian Government to stop to give any further consents on wind farm development in Dobrudzha immediately.*

- Urge the EC, immediately, to progress the general SPA designation infringement against Bulgaria in relation to Kaliakra IBA, as well as the particular infringement case on lack of adequate protection of Kaliakra.

RECOMMENDATION NO. 130 (2007) – STATE OF IMPLEMENTATION

On 30 November 2006 the Bern Convention on European Wildlife and Natural Habitats ‘opened a file’ on wind farm development on the Via Pontica bird migration route along the Bulgarian Black Sea coast. On 29 November 2007 the Bern Convention adopted recommendation 130 (2007) following the on-spot appraisal carried out in 2007, and consideration of updated information on the case.

In the following sections of the report, we first describe the progress on implementation of each aspect of the recommendation and then outline key developments in relation to the wind farm developments at Kaliakra and Balchik.

1. Review relevant decisions, at the local, regional and national level, concerning wind energy plants and ensure that new plants are not built in the region unless Environmental Impact Assessment (EIA) prove they do not have a substantial negative effect on the biological diversity protected under the Convention - EIA reports should be more precise and scientifically sound than those already presented and should formulate independent peer reviewed conclusions;

Review of decisions

To date (March 2012) none of the relevant decisions mentioned above have been reviewed.

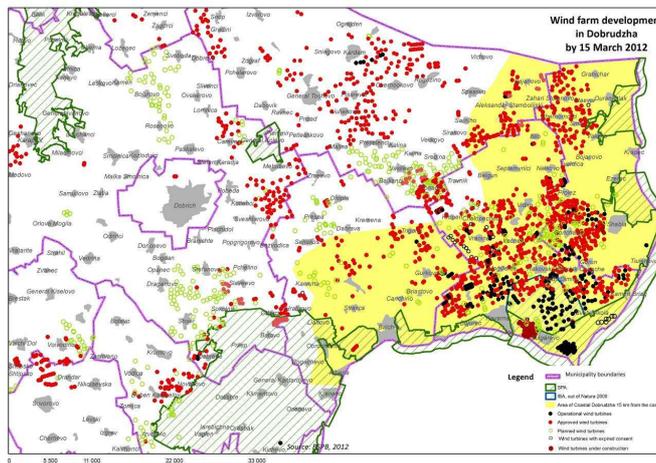
The wind farm project of EVN LTD (formerly owned by Universum Energy Ltd) is UNDER CONSTRUCTION since January 2012. Thus new 25 wind turbines will be build in the Kaliakra IBA.

Wind farm development in Dobruzha by 15 March 2012

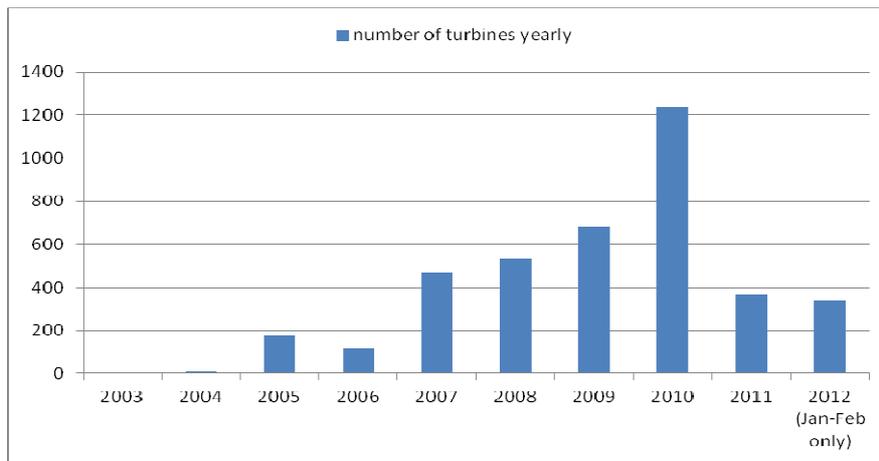
By 15 March 2012 in the area of Dobrudzha there are in total 3928 wind turbines - operational, consented by RIEW Varna but not build yet or under construction, under procedure of approval or planned as follows:

- Operational – 257 wind turbines
- Constructed but not yet operational – 12 wind turbines
- Under construction – 40 wind turbines
- Consented, but not constructed yet – 1574 wind turbines
- Under procedure registered in RIEW Varna (preparation of EIA or initiation of procedure under request) – 2025
- Rejected through EIA procedure – 14

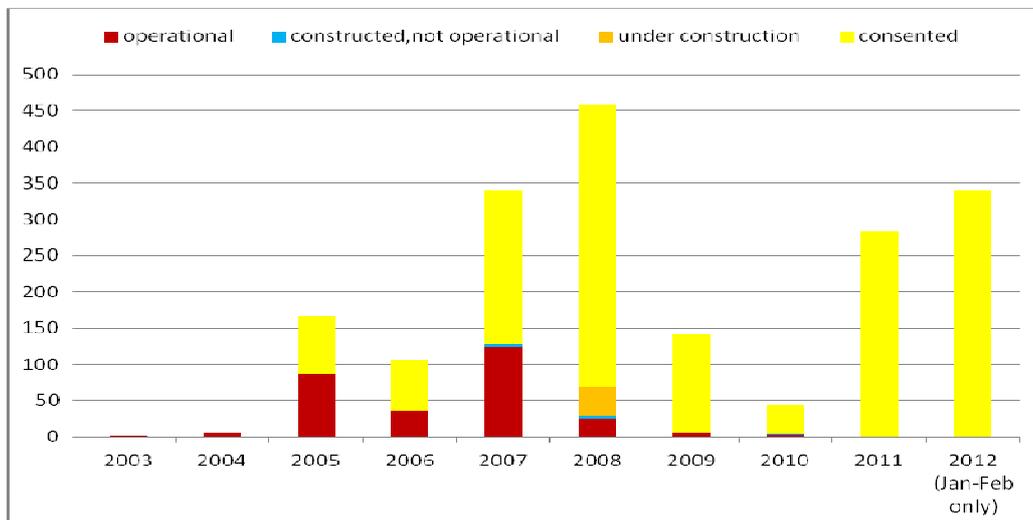
2520 of these wind turbines are visualized on the map bellow. 707 wind turbines cannot be visualized, because their exact location is known publically. The location of the other 705 is under process of identification through publically accessible tools.



The investment interest for windfarm development in Dobrudzha gradually increases through the years, before 2010 the majority of the given consents were not based on EIA reports and the salami-slicing approach was widely implemented (see the infringement 4661/2009). The discussion on a possible moratorium on windfarm development at the end of 2009 forces the investors to submit their entire projects, so a big increase in wind farm development interest was recorded in 2010. The moratorium did not happen, but at least it made clear the scale of investment interest in Dobrudzha. After the second public hearing of the SEA of the National Action Plan for Renewable Energy Sources (beginning of May 2011), new large scale wind-farm projects started to appear in Dobrudzha. This was possible, because the SEA, which requires strong restrictions for wind farm development in Dobrudzha is still not submitted by the Ministry of Economy, Energy and Transport to MoEW for final approval. It seems that the process will not stop, because during only the first two months of 2012 in total 339 turbines were consented in Dobrudzha (see the chart below) and almost every week new projects are approved.



The process of approval and construction of the windfarms is taking place very actively, especially since the second half of 2011, when a guarantee for construction was paid by the investors for the majority of the planned projects. The chart below presents what proportion of the approved wind turbines during the period 2003 – 2012 is already constructed and operational. A large proportion of the wind turbines approved in 2005 are already built, as are part of those approved in 2006. The turbines that are under construction now were consented mainly in 2008, but note that the majority of these turbines are the EVN (Universum) wind farm, that was approved by RIEW Varna in 2005, but because of complaints the consent only came into force in 2008. This particular wind farm was stopped by the court, but since the beginning of 2012 the construction work has been renewed. It is also well visible that at the beginning of 2012, for two months there were approved more wind turbines than there were approved yearly in previous years (except 2008).



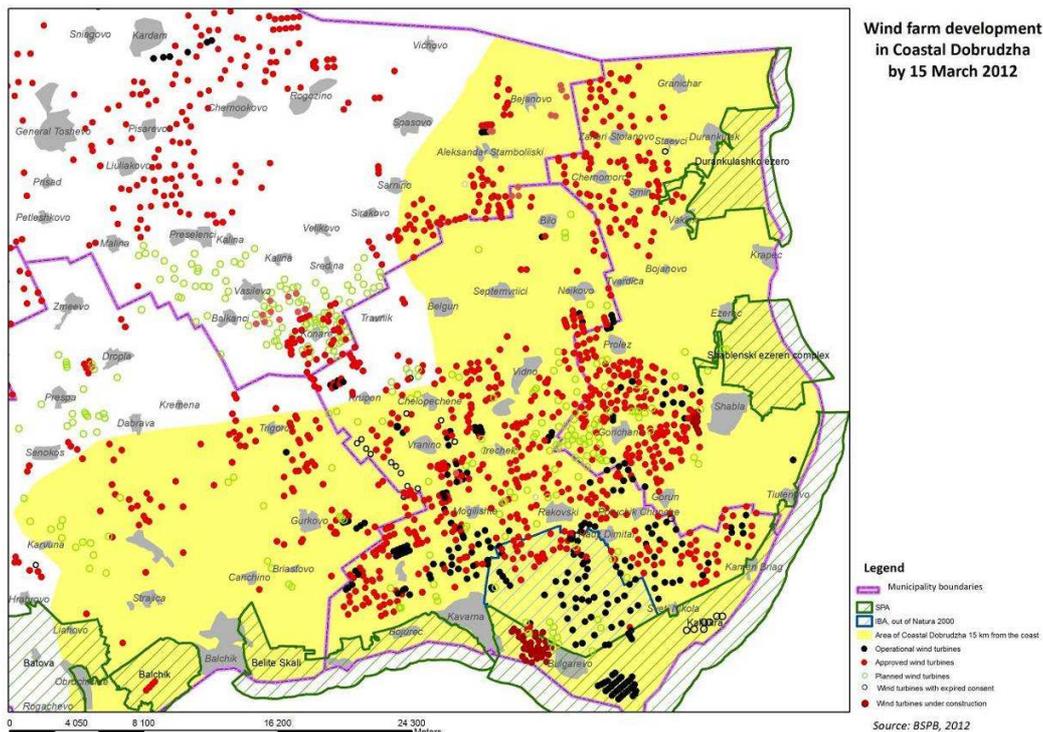
In conclusion, neither the Recommendation 130(2007) of the Standing Committee of the Bern Convention nor the Infringement procedures 4461/2009 and 4260/2008 of the EC against the Bulgarian Government are respected by the Government. These facts, together with our previous submissions, clearly confirm that the Bulgarian Government is not complying with EU Law and its obligations under the Bern Convention.

2. Fully reconsider the development of approved windfarm projects in the Balchik and Kaliakra region situated within or nearby sites designated as important bird areas and special areas of conservation;

As mentioned above new 25 wind turbines are under construction are under construction in Kaliakra IBA – the wind farm of EVN (Universum), that was previously reported as stopped by the Supreme Administrative court. For detail see page 15.

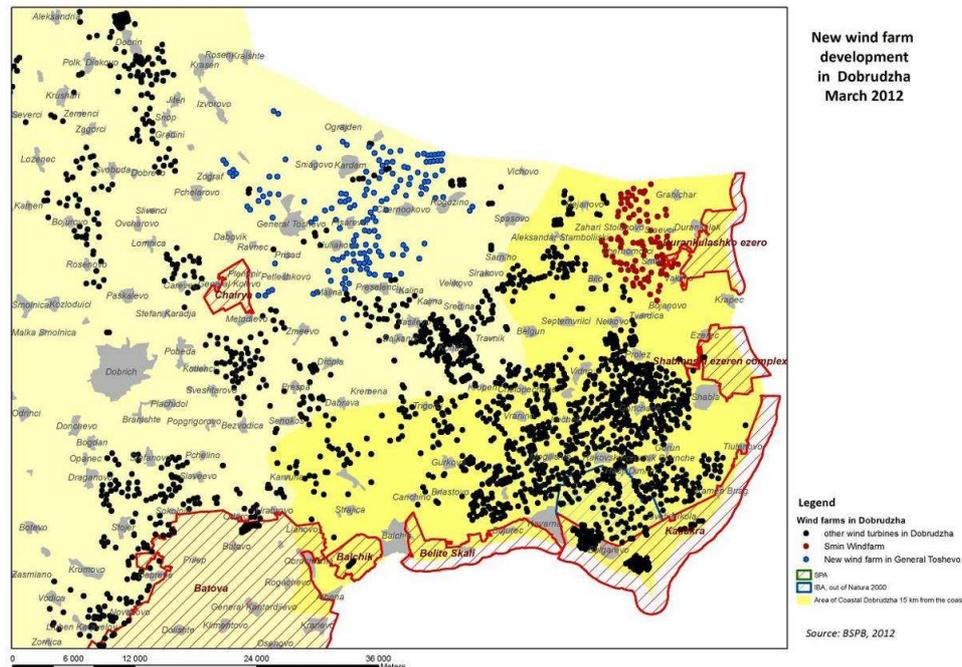
At the end of 2011, a wind farm at the border of Kaliakra IBA (35 wind turbines - investor “NT Energy”) was approved by RIEW Varna, despite the fact that it was previously stopped by this institution in 2010. This act is of clear contradiction of the Recommendation 130(2007) of the Bern Convention and additionally threatens the Kaliakra IBA. Cancellation of this project in 2010 was reported by us previously as one of the positive actions taken by the Government, but due to the recent development it cannot be treated as such any more.

By the 15 March 2012 in the area of municipalities of Kavarna, Shabla, Balchik (part) and General Toshevo (part) there were in total 1597 wind turbines consented by RIEW Varna, under procedure of approval or planned.



Part of the new planned wind turbines (95 wind turbines of the Smin Windfarm) were approved by RIEW Varna in beginning of March 2012, between Durankulak Lake SPA and the Bilo Area - a new SPA, proposed by the Government as a compensation area for the lost foraging habitats of Red-breasted Goose due to development of St Nikola wind farm (investor AES) in Kaliakra IBA (infringement 4260/2008). The consent was given despite two negative statements from the Ministry of Environment and Water, as well as strong negative opinions by BSPB/BirdLife Bulgaria, Green Balkan Federation, the Royal Society for the Protection of Birds and the Wildfowl & Wetlands Trust. In addition to this, the Director of RIEW Varna issued an order for the preliminary execution of the consent given for the wind farm, where one of the arguments used is the strong public interest. This means that the wind farm can be constructed despite any complaints in front of the court. The same

approach was used in 2005 for Kaliakra Wind farm which is now operational in Kaliakra SPA and is subject of infringement procedure. With approval of this wind farm, the efforts of the Government to compensate the habitat loss at Kaliakra IBA become useless.



In conclusion, the Bulgarian Government continues to totally fail to comply with its obligations under the Bern Convention in terms of proper protection of Kaliakra IBA and it seems that no strong actions are going to take place in order to stop the harmful wind farm development in the area of Kaliakra IBA.

3. Investigate the possibility of relocating the windfarm projects already under construction as well as the single turbines (whose building is possible without EIA) in order to restore the integrity of sites to be considered as Natura 2000 sites, IBAs, or under other protection status;

According to our information, the Bulgarian authorities have not taken any actions to implement this point and do not plan to implement this recommendation.

4. Select alternative locations for future and not yet operating turbines based on appropriate data (including long-term monitoring of biodiversity) and assessments (e.g. using multicriteria-analysis); key bird areas, potential SPAs, IBAs, intensive bird migration corridors and sites regularly used by large flocks of roosting species such as storks and wintering geese must be avoided by windfarm development;

According to our information, the Bulgarian authorities have not taken any actions to implement this point. According to the information presented above about windfarm development in Dobruzha, it seems that the Government does not plan to implement this recommendation at all. Although large scale studies are ongoing now, that there is a Strategic environmental review financed by EBRD and Strategic environmental assessment of the wind energy sector, no any practical efforts are made to apply the recommendation to approved but not yet constructed wind turbines. The government does not provide also clear position about alternatives for future new wind farms, because continue to approve wind turbines in Dobruzha at very large scale.

5. Assess the impact of the current operating turbines;

Now any new information in regard to implementation of this action, from that reported in our previous report.

6. Conduct a Strategic Environmental Assessment (SEA) of Bulgaria's wind energy programme, taking into account possible conflicts of wind energy production within the most intensive bird movements areas, in particular along the Black Sea coast;

The Ministry of Economy and Energy (MoEE) is the competent authority to implement this point. The National Energy Strategy was subject to SEA assessment in the beginning of 2010. It stressed that the Dobrudzha area is very sensitive to wind farm development.

The procedure for approval of the SEA and the plan is still not been finalised by the end of 15 March 2012 and it is still uncertain if the strong recommendations given by the SEA will be finally adopted by MoEW, because the MoEE **DOES NOT SUBMIT** the document for the final approval by MoEW. It seems that the Bulgarian government block this valuable document until it gives permits to all wind farm projects in Dobrudzha.

7. Establish a strict moratorium on further turbines and windfarm projects in the coastal areas of Bulgaria until EIA and SEA reports mentioned in paragraphs 1 and 6 are completed;

After the failure of the government to set a strict moratorium on wind farm development as required in the Bern Convention Recommendation (see previous NGO report), and apart from the designation orders for Kaliakra, Shabla Lake Complex, and Durankulak Lake SPAs which stipulate a full ban on wind farm construction, nothing has been done in this direction. In mean time, the processes of construction and approval of wind turbines continue in large scale, as described above.

8. Respect the need to focus on the avoidance of the impacts coming from outside having negative effects on areas of recognised conservation importance;

The Bulgarian authorities have taken no actions to implement this point.

9. take into account the following guidance to improve EIAs for future and not yet operating turbines, including in accordance with "Regulation about the conditions and the order for accomplishment of assessment for compatibility of plans, projects, programmes and investment intentions with the subject and the aims of the conservation of protected zones":

- **further research and monitor birds, bats, other fauna, vegetations and key landscape-ecological structures and processes influencing biodiversity; to this end long-term monitoring of flora and fauna, review and validation of all data is required, including those from NGOs, institutes and independent scientists;**
- **apply collision modelling of cumulative effects of several wind farms or turbines along intensive flyways, followed by the assessment of the suitability of localities using multicriteria-analysis methods;**
- **develop compulsory procedures to peer review the completeness and quality of biodiversity chapters of EIAs and their conclusions before continuing the administrative and legal processes;**

Since April 2011 the MoEW initiated the implementation of a project "Mapping and identifying the FCS [Favourable Conservation Status] of habitats and birds Phase I", with a special section "Birds: **Identification and minimizing the risks for the wild birds**". In the light of the information presented above it seems that the Government does not plan to use the results of this project for real strategic planning of windfarm development, because vast development will be happen already before the end pg the project.

10. Develop guidelines for appropriate planning of the construction of windfarms and/or individual turbines, taking account of the following issues in order to integrate biodiversity conservation concerns:

- *initiate a broad debate on the precautionary principle regarding development projects in relation to sites with outstanding biodiversity values;*
- *take measures for the removal of turbines in case of unacceptable bird collisions where no alternatives exist; this requires the drafting of a set of mitigating and compensatory measures when biodiversity losses occur;*

The government is planning to create guidelines as part as the project described above.

KALIAKRA CASE

THE KALIAKRA WIND FARM PROJECTS

By the 15 March 2012 in the area of municipalities of Kavarna, Shabla, Balchik (part) and General Toshevo (part) there were in total 1597 wind turbines consented by RIEW Varna, under procedure of approval or planned. They are presented in the table below and the map in figure at page 7.

Table 2.

Stage of construction / approval	Number of turbines	Turbines in Kavarna Municipality	Turbines in Shabla Municipality	Turbines in Balchik Municipality	Turbines in General Toshevo Municipality
Operational	253	216	20	7	10
Constructed, but still not operational	0				
Approved, under construction	40	32	8		
Approved by RIEW, not yet constructed	1214	454	260	163	337
Total approved and operational	1507	702	288	170	347
Planned wind turbines and wind turbines approved by municipality	615	143	74	189	209
rejected through EIA process	3	2			1
not longer valid, because of expiring of the consent	7	7			
Total number of turbines	2132	854	362	359	557

For comparison, in the beginning of 2007 there were only 9 wind turbines constructed and operational in Kaliakra IBA as it was presented in details in the previous NGO report. Since then significant damage from wind farm development has already happened and the development in the area and around it has not stopped, despite the recommendation 130(2007) of the Bern Convention to stop further wind farm development in the region. There are no moves by the regulatory authorities to improve the situation.

- **Geopower Energy** (7 turbine project in the region of Sveti Nikola)
No new information. The consent is recently expired, so this wind farm might not be constructed.
- **Geopower Energy (AGE)** (53 turbine project North of village of Balgarevo; 47 of the turbines are located in Kaliakra IBA)

The windfarm is operational since January 2010.

The critical analysis of the published results of the bird monitoring of St Nikola wind farm clearly show loss of foraging habitats for Red-breasted goose, due to the construction of this wind farm.

To date, AES Geoenergy issued three reports on wintering birds at St Nikola Windfarm as follows: season 2008/2009, 2009/2010 and 2010/2011. The reports present the distribution of wintering geese, including Red-breasted goose. At first view the reports include all necessary components of a scientific report, explaining the methodology, results and analysis of the results, references. When looking at the reports, it seems that geese, and Red-breasted goose in particular continue to use the wind farm area as a foraging ground, which could be treated as lack of displacement effect and habitat loss. This misleading conclusion could be made, because one significant detail about the wind farm is missing in all the reports – that is, when the wind farm was constructed and become operational. From the reports it could be concluded that the wind farm operates though all the three seasons, but the history of the wind farm is different.

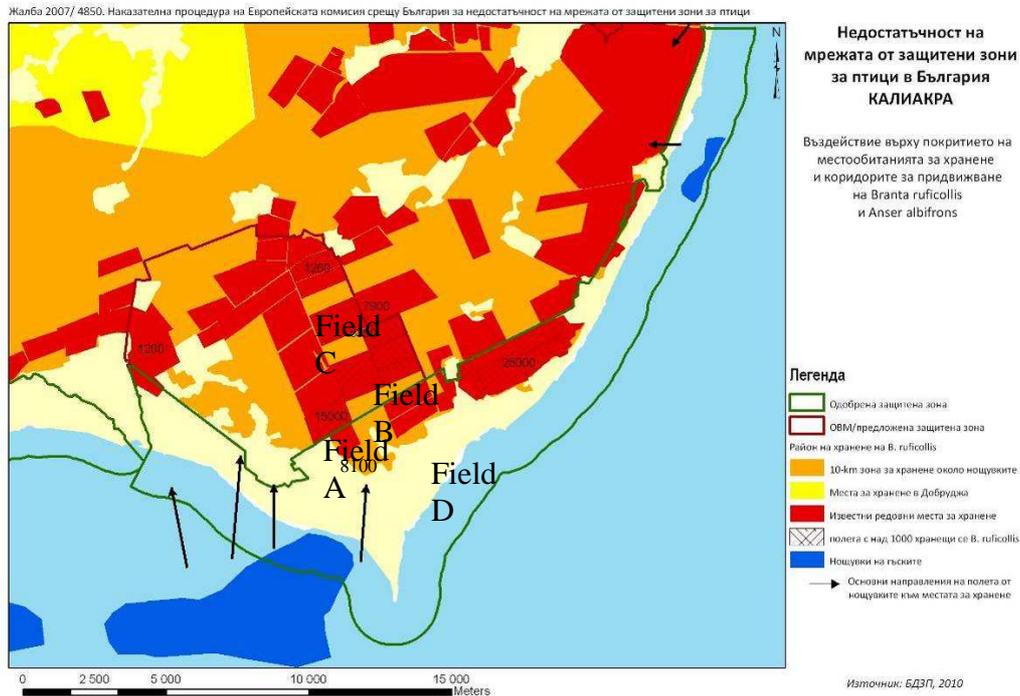
It has to be noted that during the first field season, 2008/2009, the wind farm was still not constructed. During that winter some construction activities took place, related to construction of roads and supporting facilities, which could lead only to disturbance by people and machinery in certain parts of the project area. In reality, the geese could not be affected by the wind turbines during this winter season, because these turbines were not there. Thus the first monitoring report presents the geese distribution before the erection of the turbines, with some disturbance impact due to start of the construction work. The erection of the wind turbines started in August 2009, but they start to operate in the middle of the wintering season 2009/2010. Thus the second monitoring report presents the distribution and behaviour of geese in case of erected but still not operational wind turbines. In practice the last season (2010/2011) is the first one, when all the wind turbines were operational during the entire winter. Thus the third monitoring report is the only one which presents the distribution and behaviour of the geese in the area of the St Nikola wind farm. The maps of this report clearly show that Red-breasted geese did not enter within the wind farm area, despite the fact that the wind turbines are situated at relatively large distances each from another. In the table below there is a comparison between the data of the report on wintering geese 1996-2000, prepared by Dereliev (when in the whole region there were not any wind turbines) and the data from AES monitoring reports, where one and the same fields are compared:

Season	1996-2000 (Dereliev)	2008/2009 (AEC)	2009/2010 (AEC)	2010/2011 (AEC)
Status of the wind farm	Not any wind turbines in the whole Dobrudzha	The St Nikola wind farm is not constructed; construction of roads and supporting facilities starts; first winter of operation of Kaliakra windfarm, situated SE from the St Nikola WF	Wind turbines are erected; they start to operate after the middle of the winter	First winter of operation of St Nikola wind farm during the whole winter period;
	Number of birds	Number of birds	Number of birds	Number of birds
Field A (in the wind farm, close to its south border)	15000	0	1000	0
Field B (within the wind farm)	6850	5000	500	0
Field C (close to the road Kavarna – Shabla), close to several wind turbines in Rakovski settlement areas north of the road	1260	0	200	0
Field D (area outside the wind farm) – control area	8100	0	8000	0

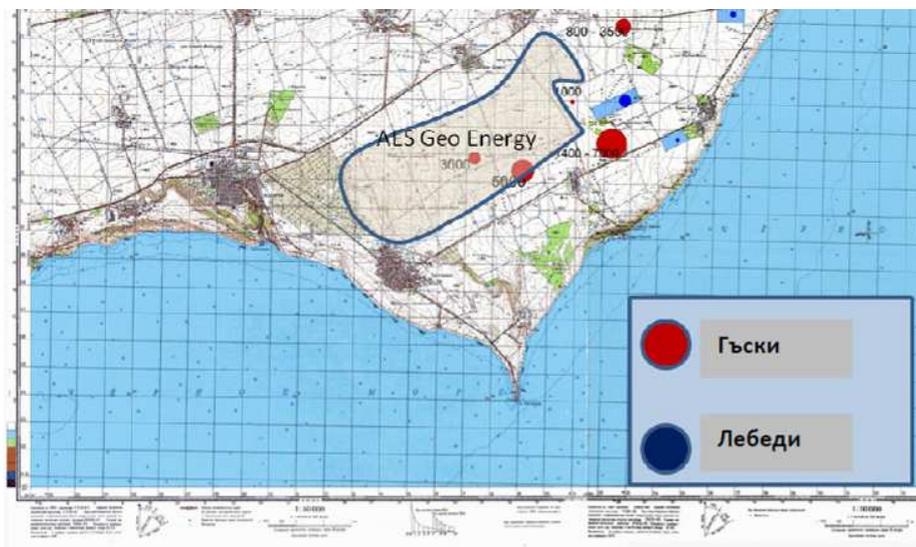
Looking carefully at the data, it could be concluded that the operation of the wind farm most probably forced the birds to abandon the area of the wind farm. Lack of birds in some of the fields during the season 2008/2009 could be because of no winter crops on these fields or disturbance due to construction works. Below are attached maps taken from AES reports, as well as a map taken from a BSPB report to MoEW in relation to the Kaliakra infringement procedure. The maps illustrate the displacement effect to red-breasted goose, caused by the operational wind farm (despite the large distances between the wind turbines).

For the purpose of comparison, a control area is used, where there are no wind turbines. The number of wintering geese in this territory remains relatively the same.

Map of the fields where geese regularly forage according to Dereliev, 2000 (through digitizing the primary data)



Map of the geese distribution published in the AES monitoring report 2008/2009 г.



Фигура 8. Разпространение на хранешите се гъски в смесени ята (червеногуши и белочели) спрямо площадката на Проекта. Селскостопанските площи са обозначени в червено ако дори едно единствено ято гъски е регистрирано през периода ноември 2008 – март 2009.

Map of the geese distribution published in the AES monitoring report 2009/2010

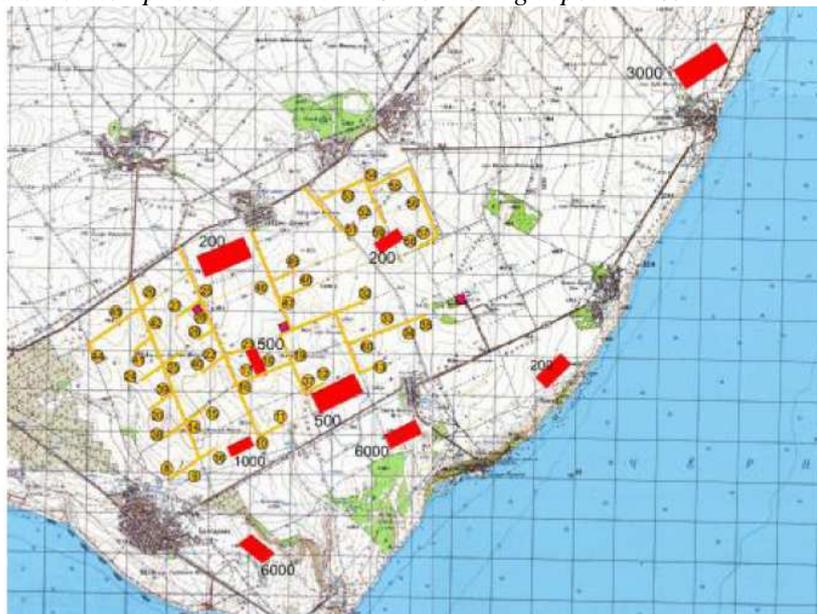


Figure 4. The distribution of feeding RBG in relation to the Project area. The maximum registered number during the season is given.

Map of the geese distribution published in the AES monitoring report 2010/2011

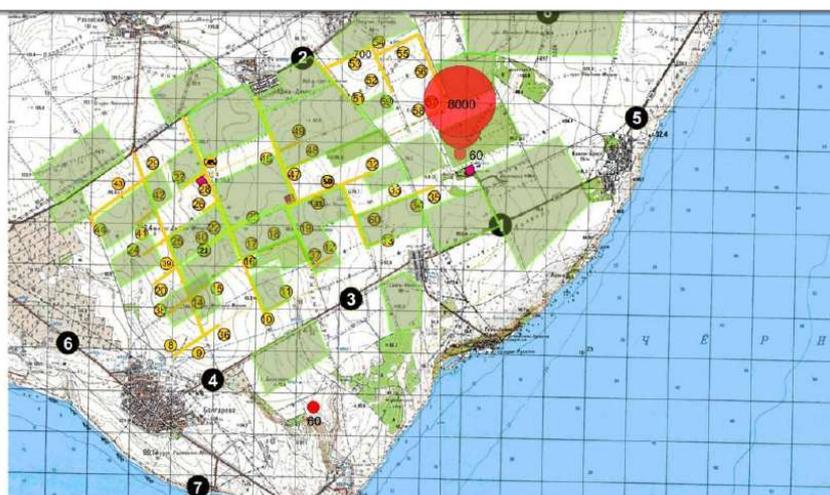


Figure 4. Distribution of feeding RBG in the wind farm territory in the period 6 – 20 January (the maximum and minimum number is indicated and the available wheat fields are presented in green).

These results are also confirmed by BSPB studies in the area (**Appendix 1**).

The globally endangered Red-breasted goose appears to be one of the most severely affected bird species due to wind farm development in Bulgarian part of Dobrudzha, where the majority of the entire world population stay during the winter!

- **Universum Energy Ltd.** – now owned by EVN Company. (32 turbines between Kavarna town and Balgarevo village located on steppe habitats)

At the beginning of 2012, construction activities started at EVN (Universum) wind farm, which had previously been stopped by the MoEW and where the Court judged in favour of MoEW. The blocking of implementation of the EVN wind farm was reported to the European Commission and the Bern Convention as one of the most successful steps taken by the Government to comply with EU law under the Kaliakra infringement case. In response to a letter from BSPB, the Ministry confirmed that

the wind farm is going to be built, which means that the third big wind farm will be build in Kaliakra IBA in contradiction with EU law. It means also that the Government failed to stop this damaging development as well.

Pictures of EVN windfarm construction - January –February 2012

Construction of cables along the border of Kaliakra SPA – January 2012



Erected wind turbines – February 2012



- **INOS-1 Ltd** (35 turbines between Balgarevo village and the buffer zone of Cape Kaliakra nature reserve)
No new information
- **“Vertical-Petkov”** – (1 turbine out of 3 is constructed)
Operational. No new information.

Because there is no progress with the case on a national level, BSPB and BirdLife International has been working together with the European Commission on the opened infringement procedure.

BSPB and BirdLife International representatives met with European Commission desk officers on 21 March 2011 to discuss, among other cases, the Kaliakra infringement.

BSPB/Birdlife submitted to the Commission all the information presented in this report, as well as documents issued by the authorities, and such related to the case. The Commission informed BSPB and BirdLife International that it is working to proceed further the infringement case to Reasoned Opinion (second legal warning), aiming to remove the wind farms from Kaliakra IBA and to take the Bulgarian Government to the European Court of Justice if it continues not comply to EU law. In our opinion the Commission will be beneficial of any support by the Bern Convention in relation to these efforts.

BALCHIK CASE

Investor “Tessa Energy” Ltd. (12 turbines approved by RIEW at Balchik IBA)

No new information about this project. No turbines are constructed on the site.

Appendix 1



BULGARIAN SOCIETY FOR THE PROTECTION OF BIRDS

OVERVIEW OF THE IMPORTANCE OF COASTAL DOBRUDGA FOR THE CONSERVATION OF THE GLOBALLY THREATENED RED-BREASTED GOOSE (*BRANTA RUFICOLLIS*) AND OTHER WINTERING GEESE AND THE IMPACT OF WINDFARM DEVELOPMENT



Prepared by
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Sofia, March 2012

Introduction and back ground information

The Bulgarian Society for the Protection of Birds has initiated the wintering geese in a monitoring programme Coastal Dobrudga back in 1995. Since then regular monitoring over fortnight period has been started covering the whole wintering period from the beginning of November till the end of March which effectively covers the arrival and departure of the geese. The initial start of the programme has been funded within the framework of the Bulgarian-Swiss Biodiversity Programme funded by the SDC of Switzerland (Swiss Development Agency). The monitoring protocols and approach was established at that time and has been followed in a comparable manner ever since (Dereliev, 2000). The programme has subsequently been supported since 2002 with funding and scientific consultation provided by the Wildfowl and Wetlands Trust, UK. The area of Shabla and Durankulak Lakes have been identified as key sites for the Red-breasted Goose wintering based on over systematic monitoring work over the winter period. The Redbreasted Goose has been focus of more detailed studies within the monitoring programme framework with data collected on age structure, physical condition (abdominal profiles) and several years of mapping of foraging flocks.

Since November of 2010 the Bulgarian Society for the Protection of Birds is working on a large scale Life+ Project "Save Grounds for the Redbreasts" LIFE/NAT/BG-09/000230. The Project amongst other aims at establishing the monitoring scheme on a long term basis, develop foraging habitat model for the Red-breasted Goose, develop sensitivity map for the area of Coastal Dobrudga to guide future investment proposals. As part of this work an analysis has been done of the available and newly collected data aiming to assess the spatial impact of windfarm developing on geese in this region. Three major impacts of windarms have been identified in the review made on the behalf of the Bern Convention – Disturbance leading to displacement or exclusion, including barriers to movement; Collision mortality and Loss of, or damage to, habitat resulting from wind turbines and associated infrastructure (Pullan & Langston, 2003). It is generally accepted that large waterbirds with poor maneuverability like geese and swans are potentially vulnerable to collisions with windfarms (Brown *et al.* 1992), as well as species that habitually fly at dawn and dusk or at night are perhaps less likely to detect and avoid turbines (Larsen & Clausen 2002) as the daily routine of the wintering geese is. However the most obvious and studied impact of windfarm development has been disturbance and displacement effect at the wintering and migratory stop over sites (Pullan & Langston, 2003).

There are number of review documents looking into the existing data evidence on the impact of the windfarms on waterfowl and geese specifically eg. see Hotker *et al.* (2004), Stewart *et al.* (2004), Drewitt and Langston (2006). Concerning the disturbance effects, the flocking geese, swans, ducks and waders are considered vulnerable to wind farm development, since they generally avoid wind farms and displacement effect has been documented. Stewart *et al.* (2007) found out that Anseriformes to be the group that suffers the greatest impact in terms of greater declines in abundance than other taxa. Time since windfarms commenced operation also have a significant impact on bird abundance, with longer operating times resulting in greater declines in abundance than short operating times. The authors point out that windfarms may have significant biological impacts, especially over longer time scales, but the evidence-base is poor and more long-term impact assessments are required. Further Kirby *et al.* (2008) point out that because of the tendency to congregate the loss of one site could have devastating effect on waterbird flyway populations.

On a wider ecological scale, the issue of avoidance also raises questions about the functional connectivity of landscapes, defined as the degree to which the landscape facilitates or obstructs the movement between resource patches (Taylor *et al.* 1993; Belisle 2005; Baguette and Van Dyck 2007). Onshore wind farms are typically positioned in open coastal landscapes where the highest wind speeds prevail, largely overlapping the habitats of waterfowl and waders, and wind farms can potentially consume a considerable amount of the potential suitable habitat (Larsen & Madsen 2000). Therefore, avoidance may cause additional travel and related energy costs and cause a fragmentation of the potential area to a degree affecting the overall quality of the area (Madsen & Boertmann 2008).

The development of the windfarm industry in Bulgaria has been started in the mid 1995 without prior National Action Plan and Strategy on development of the sector and therefore without any Strategic Impact Assessment on the proposed industry development. Much of the situational and spatial planning left to the private initiative and this has been resulting in a chaotic campaign type of

development. This has resulted in much ill-situated projects that have threatened the integrity and objectives of several SPAs part of the Natura 2000 network in Bulgaria.

The area of NE Bulgaria and specifically the coastal Dobrudga is of key importance as a wintering ground of the globally threatened Red-breasted Goose (*Branta ruficollis*) where up to 88 000 birds have been registered in the mid and late 1990s, accounting for up to 90% of the global flyaway population, with the major wintering grounds located around the lakes of Shabla and Durankulak and the bay of Balchik and Kavarna NE Bulgaria (Dereliev & Georgiev, 2002, Kostadinova & Dereliev, 2007, Michev et al, 2000). The Red-breasted Goose breeds in Arctic Russia and migrates in winter around the northern and western coasts of the Black Sea. It occurs almost entirely in five countries – Bulgaria, Kazakhstan, Romania, the Russian Federation and Ukraine – which therefore have a special responsibility for the conservation of the species. Bulgaria and Romania hold up to 100% of the wintering population in the EU and therefore have the highest responsibility of the species conservation within the EU (Cranswick *et al.*, 2010). The Red-breasted Goose has recently suffered considerable population decline with population crashing from estimated 90 000 birds in late 1990s (Delany & Scott, 2006) to ca. 38 500 birds in the years after 2000. This population decline resulted in the species status raised from Vulnerable to Endangered making it the most threatened goose species in the world. In the recent years urbanization of the wintering grounds in Bulgaria and other land-use changes as tourist developments, crop changes and introduction of technical crops like coriander and recently huge expansion of oil seed rape has raised concerns over the future of the area of Bulgarian part of Dobrudgea as wintering ground for the species (Cranswick *et al.* 2010).

The area is also of key significance for the “Ponto-Anatolian” flyway population of the Greater White-fronted Goose (*Anser albifrons*) with up to 60% of the population registered in the same area (Delany & Scott, 2004, Kostadinova & Dereliev, 2007). Amongst other wintering goose species is up to 3% of the “rubrirostris, Black Sea – Turkey” flyway population of the Graylag Goose *Anser anser* and up to 1% of the globally threatened Lesser White-fronted Goose *Anser erythropus* (Petkov et al., 1999, Kostadinova & Dereliev, 2007).

Dynamic of peak counts of the Red-breasted Goose and phenology of the species

Since 1995-1996 regular counts in the area of Shabla Lakes Complex SPA and Durankulak Lake SPA from November to March are conducted twice per month or 11 counts per season. This data has been providing information which combined along with the data from simultaneous counts in Romania and Ukraine have been providing data for establishing global population size and conservation status. All roost sites in Bulgaria are counted simultaneously, including the lakes and the sea (ca. 30 km coastline). On Figure 1 is presented results of peak counts registrations per winter season historically and since the beginning of the systematic monitoring.

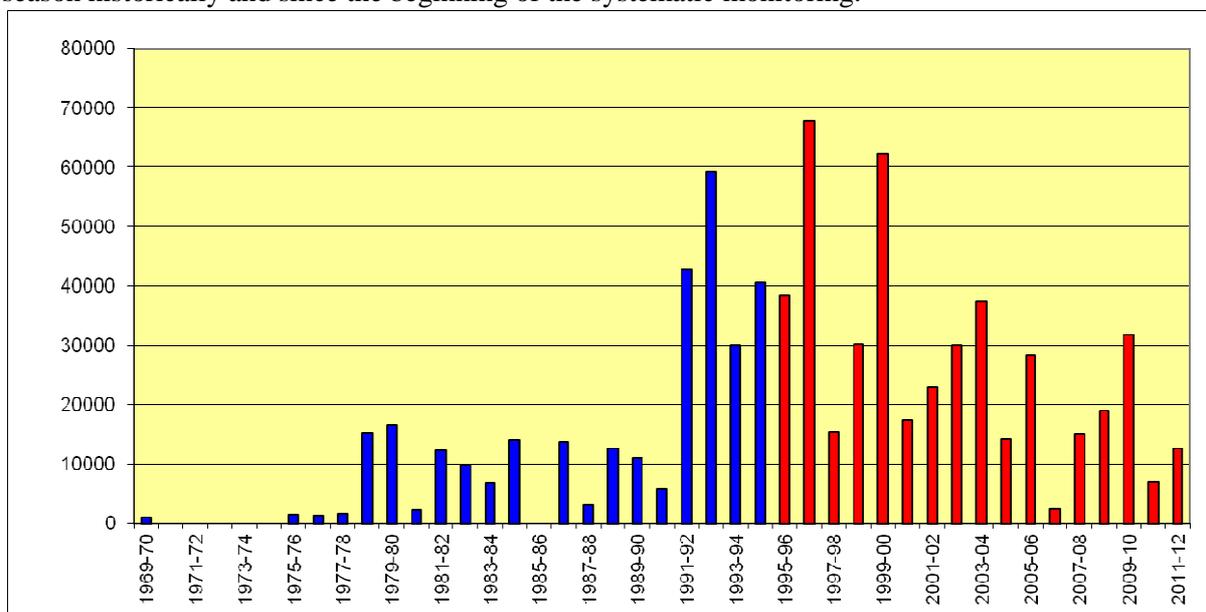


Fig.1 Annual peak counts of Red-breasted Goose in Durankulak and Shabla Lakes

As it could be seen from the graph there is considerable dynamic in the peak counts of the species, which vary from 98% of the population to 6% of the global population. The total numbers of the peak counts have reduced in size alongside with the dramatic decline of the species population in the late 1990s and early 2000s. The number and peak concentrations of the species are highly dependent on the temperatures and the more mild winters in the recent decade cause high variability in the numbers. Never the less there is no clear trend to suggest that the area of Bulgarian Coastal Dobrudga is with diminishing importance for the wintering and conservation of the Red-breasted Goose. On contrary in the recent data collected within the framework of the AEWAs Red-breasted Goose International Working Group (Coordination supported by WWT and hosted c/o BSPB) outlines the area of Durankulak Lake and adjacent arable land as the key site in winter time for the species where regularly on an annual base are recorded the highest concentrations in a single site location during winter period.

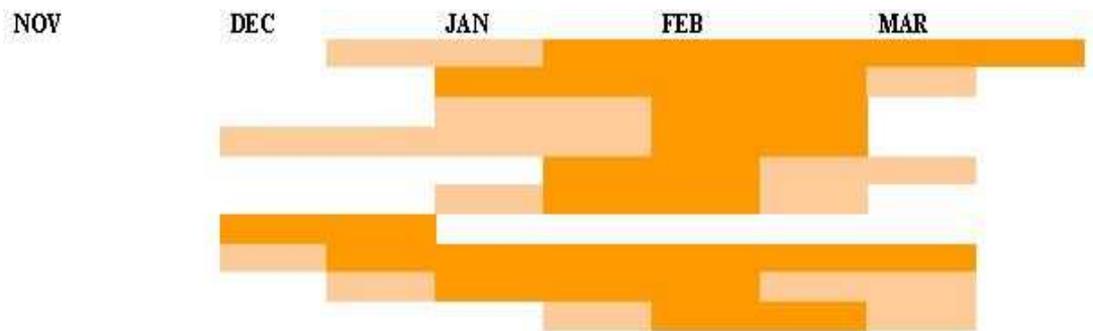


Fig.2 Phenology of the Red-breasted Goose up to 2000

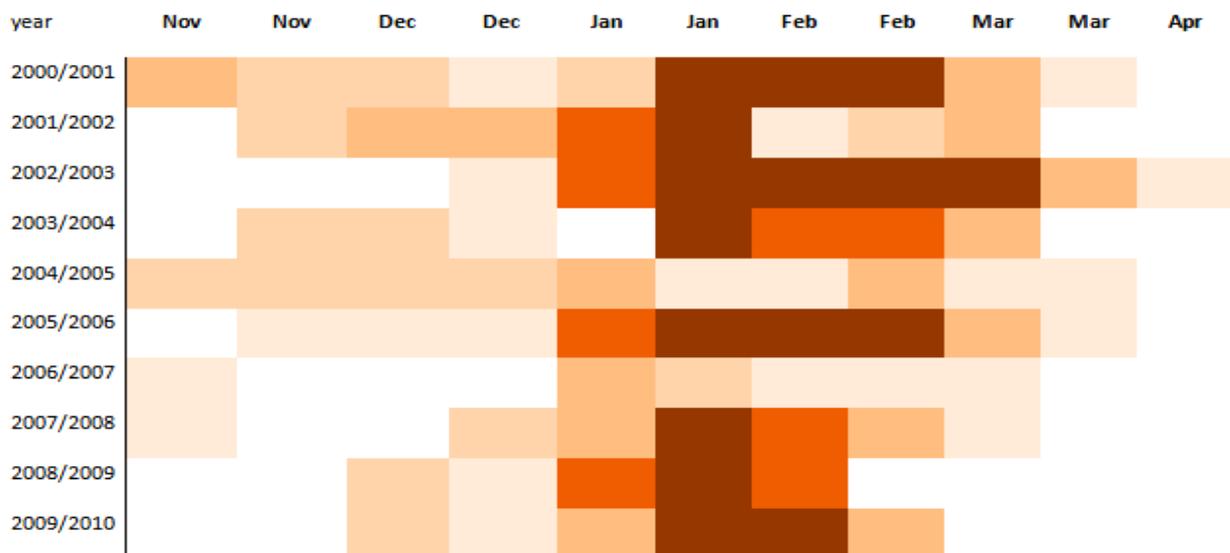


Fig. 3 Phenology of the Red-breasted Goose since winter 2000-01

Looking into the phenology of the Red-breasted Goose in the area of Shabla and Durankulak the data shows that the average length of stay in the area is 71 days (concentrations with more than 1,000 birds) and 42 days (concentrations of more than 10,000 birds). The inter-annual variations of stay range from 27 to 108 days (> 1,000 birds) and from 15 to 89 days (> 10,000 birds). In the recent years is easily identifiable trend of birds concentrating in higher numbers in the mid and second half of January, but this could vary a lot from year to year. This partially is related with the changes in the weather temperatures and the shift of the 0°C isoline. The However it should be pointed out that there is no clear trend in reduction in numbers of wintering red breasted geese in terms of peak numbers. However the observed decrease of the peak numbers relates to the decline in the global population as a whole.

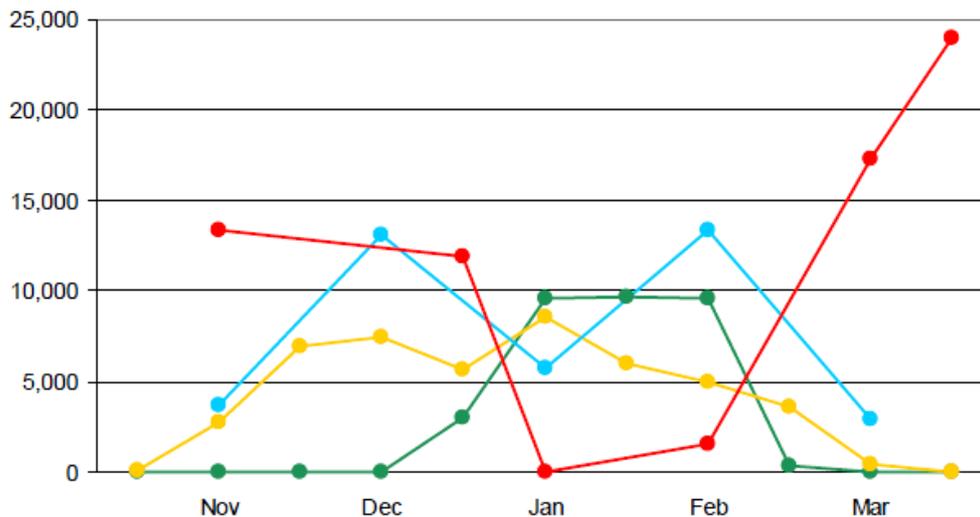


Fig. 4 Average peak numbers of Red-breasted Geese registered per range country for the period 2005-06 to 2008-09 (Cranswick et al., 2011). Russia (red), Ukraine (blue), Romania (yellow), and Bulgaria (green)

As could be seen from Fig.4, Bulgarian Coastal Dobrudga holds the highest permanent concentrations for the period January to early March on an annual base. Compared to countries like Ukraine and even Romania the peak numbers are not that persistent for a long period and the concentration of the species is mostly related to the weather conditions and the sings of cold spells or warming up of climate. This clearly outlines the Coastal Dobrudga area and Bulgaria a key country for conservation of the species in a critical period of the annual cycle which is related to the hardest conditions of winter, as well as the time prior to the departure towards the breeding grounds. Previous studies have conformed correlation between the mass movements of wintering geese in Bulgaria related to the temperature variation (Dereliev, 2000). However the data analysis from the monitoring programme on the species in Bulgaria and long term evidence suggest that despite of the variable length of the stay of the redbreasted geese in NE Bulgaria, this is a permanent important ground for the species.

Roost and foraging grounds of the Red-breasted Goose and other wintering geese species

The monitoring of the Red-breasted Goose and other wintering geese species since 1995 have established several key roosting areas (Figure 5), amongst which the SPAs Durankulak Lake and Shabla Lakes Complex are of top most importance. In addition the sea side in front of the lakes and the bays of Tyulenovo-Kamen Bryag, Zelenka bay, Kavarna and Balchik Bays could hold significant numbers of roosting geese including more than 1% of the flyway population of the Red-breasted Goose. The roosting sites are probably selected based on the level of disturbance, shelter provided by the roost and proximity of suitable foraging grounds. However this subject is still little and insufficiently known and the current knowledge is not allowing to make clear conclusions on the roost site selection process. The details of the linkages between the roosting sites and the foraging grounds are subject of the field studies implemented currently within the framework of the Life Project "Safe Grounds for the Redbreasts". The research activities envisaged within the project include tagging of up to 30 birds to track the movements within the wintering grounds and between roosts and foraging areas. However so far there is data from one individual, which however detailed and telling are, they are still based on a single bird and deviation from the general pattern of movements and behavior is possible. The GPS Eobs tag fitted to an adult male Red-breasted Goose revealed a lot of inter-linkages between various foraging sites and roosting sites both in Shabla Lakes Complex and Durankulak Lake and the sea bays in front of the coast between Durankulak and Kavarna. The data from that individual revealed that the species is using for roosting both the sea bays close to the foraging area as well as the lakes territory and flying down to more distant crop fields. The data also revealed that the species is flying well after dark in the evening. Though the tags give precise location and flight directions, speed and height it is still a single bird and more studies are required before we can say exactly how the bird

select roost sites and when they use and alternate different options. Some of the obvious factors that determine it are likely to be the disturbance within the lakes from poachers and hunting activity and fishing nets and the freezing of the open water on the lake surface. However there might be unknown other factors which need to be investigated before conclusion. The hunting disturbance has been outlined as a key factor forcing the roosting in the sea instead of the lake water roosting, but considered in isolation outside the other factors it might be misleading. There is however some evidence that the inappropriate location of windfarms along the high rocky coast of Kaliakra area might be causing barrier effect for the geese trying to reach foraging grounds when coming from roost sites in Kavarna bay. A flock of red-breasted geese was observed during morning count to show avoidance behavior and make several circles and attempts, before gaining enough height to fly over the turbines at Kaliakra IBA (Irina Mateeva *in litt.*). The selection of roost sites might not be taking into account such barriers as wind turbines which might not pose a problem for the geese flocks when descending from the elevated rocky coast to the lower roosting site at the sea bays. However the morning flights towards the coast, which is elevated over 100m above the sea might cause obstacle and require more effort due to the erected turbines some of which close to the shore line. This would obviously require more energy spending by the incoming flocks of geese in the morning as the observation suggest (though no quantified data exists yet) that the geese prefer to fly over the turbines instead of navigating through the wall of turbines.

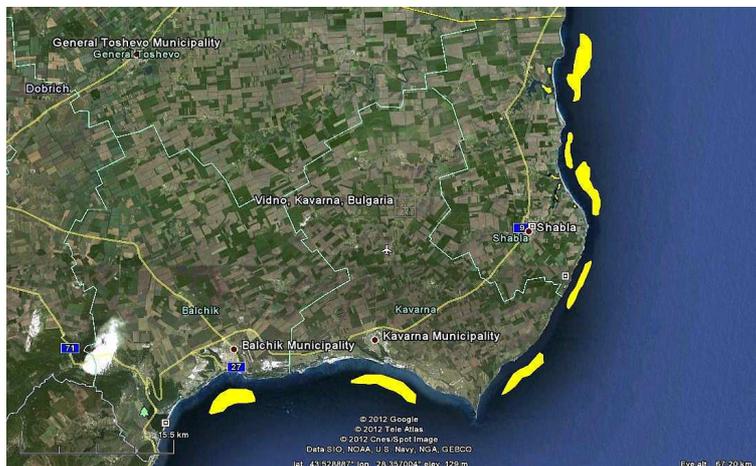


Fig.5 - Roosting sites of wintering geese in Coastal Dobrudzha (in yellow)

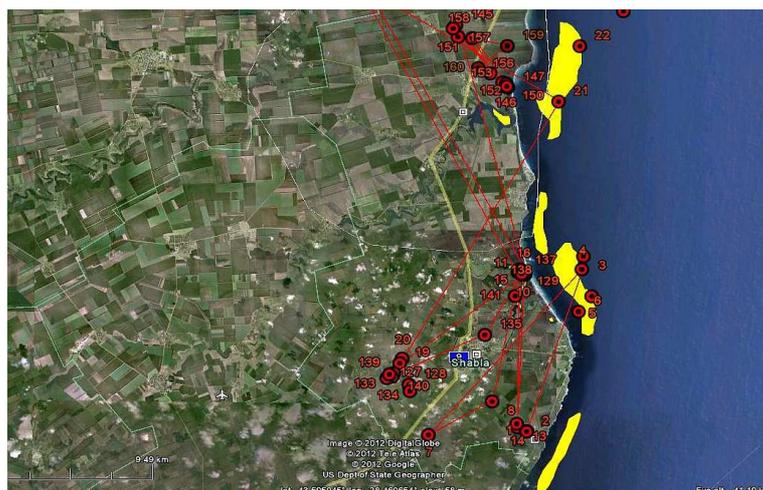


Fig.6 – GPS locations of roosting sites and foraging sites of an adult male *Branta ruficollis* equipped with GPS Eobs tag in January 2011. The red lines indicate the direct line between two consecutive locations, but not necessarily the exact flight lines.

As part of the priority research activities under the Life Project “Safe Grounds for the Redbreasts”, BSPB with the support and consultation by the Wildfowl and Wetlands Trust and the RSPB have started since January 2012 data collection on flight behavior and impact of wind turbines on the geese, but this would require at least 2 or 3 field seasons before obtaining reliable results for analysis.

The first studies on foraging grounds distribution mapping of the species have been undertaken by BSPB field team in the second half of 1990s to year 2000 (Derelev, 2000). The mapping has been conducted within the 15-20km zone along the coast generally considered to cover the Coastal Dobrudzha area and most suitable foraging ground for the wintering geese in terms of crop suitability and proximity to roosting grounds. When the first foraging mapping it took place in the period 1995-2000. At the time of the mapping of the foraging grounds at that period there were little external factors to influence the distribution of the geese amongst the crop fields in the area – there was predominantly winter wheat being grown and no erected or operating wind turbines in the area. It should be pointed out that the methodology of the mapping of the foraging grounds that was implemented during this study might have allowed some overlooking of foraging flocks as not the whole territory of Coastal Dobrudzha was regularly searched for foraging flocks and while the data collected over this lengthy period of time is providing good overview of the distribution of the foraging grounds of the Red-breasted Goose it may not show the complete picture, especially in regard to the presence of foraging flocks in some inland areas and some fields which are difficult to assess as they are only partially visible. However this data give a good picture and indication on the distribution of the Redbreasted Goose and other wintering geese prior to the burst of the windfarm development in Dobrudzha. Therefore this data allowed BSPB to implement a spatial analysis on the changes in the distribution of the foraging flocks and the windfarm development (Petkov *et al*, *in prep.*). The availability of “before and after” data allows more precise assessment of the influence of the windfarm development in the whole region of Coastal Dobrudzha. So far the EIA reports and post construction monitoring work of the wind farm investors have either lacked the appropriate data to make adequate assessment, have ignored facts or failed to look at the bigger picture and attempt more rigorous cumulative impact assessment.

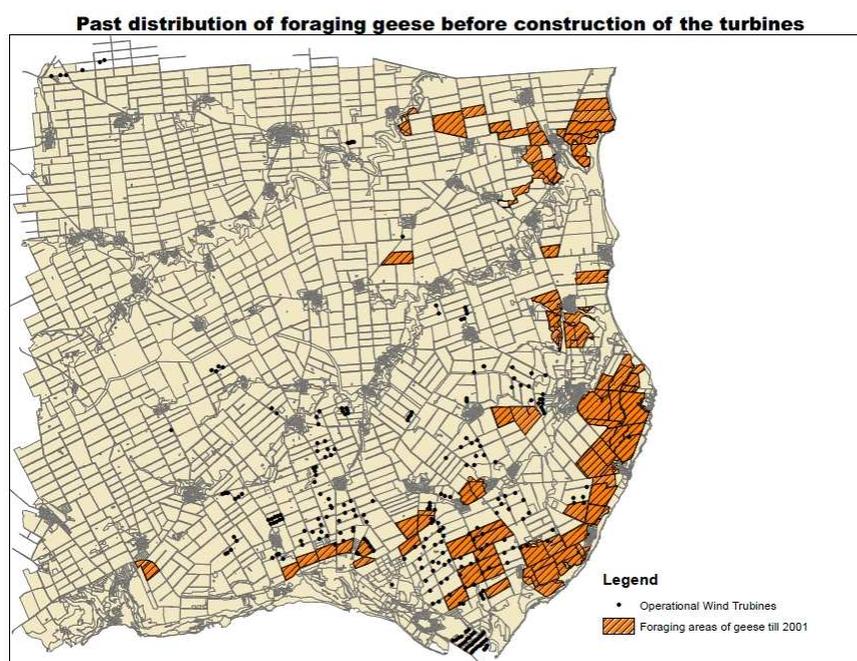


Fig.7 – Distribution of the foraging flocks of wintering Red-breasted Goose and other geese species in Coastal Dobrudzha in the winter period of 1998-99 and 1999-2000, based on data from Derelev (2000) with the currently (as per August 2011) operating wind turbines

The individual monitoring work on windfarms assessing the threats or rather aiming at reducing the risk by instructing shut downs of individual turbines do not allow appropriate impact assessment of the development, in most cases because of lack of rigorous scientific data before the construction, especially when the wider picture is concerned.

As it could be seen from Fig.7, the distribution of the foraging grounds was predominating in the area of Shabla Lakes Complex SPA and the area of Kavarna Municipality. The data collected by Derelev (2000) showed the importance of the crop fields in Kavarna area, including near Kaliakra SPA and the coast up North. In his report the author assigned as key/important fields those that regularly hold (at least 2 years during the study) flocks of over 1000 RBGs. Therefore some investors

using this report and interpreting the data often refer to only those fields who have been assigned as key one (i.e. the SMIN windfarm investor's EIA report). This could be very misleading and quite narrow interpretation of the data as "key" areas do not necessarily mean sufficient foraging areas. Currently there are significant changes in the region following this report and foraging flocks mapping in terms of development of infrastructure and also introduction of new crops in the area such as oil seed rape.

The BSPB has initiated field survey since the winter 2009-10 and subsequent field mapping survey for the winter 2010-11. For two successive winter season systematic field survey work has been carried out which focused on collecting data on foraging flocks distribution within the 15km boundary of Coastal Dobrudzha. This has provided enough data for the BSPB to conduct initial assessment on larger scale changes of the distribution of the foraging flocks of wintering geese and specifically the Red-breasted Goose. The surveys method consisted of visiting all potential feeding areas –cropfields with winter wheat or other suitable crop, within a perimeter of maximum of 15km around the roosting sites. Observations on the numbers of wintering geese and the flight directions were used as proxy for field search of feeding flocks. Each observed flock has been recorded on a printed detailed map with the physical blocks in the area and later transferred into GPS location or GPS coordinates were taken on spot. Subsequently the data has been digitized and transferred into GIS map with cadastral information (Petkov *et al*, *in prep.*). The general distribution of foraging flocks (linked to the physical blocks of the arable land) is presented is presented on Fig.8.

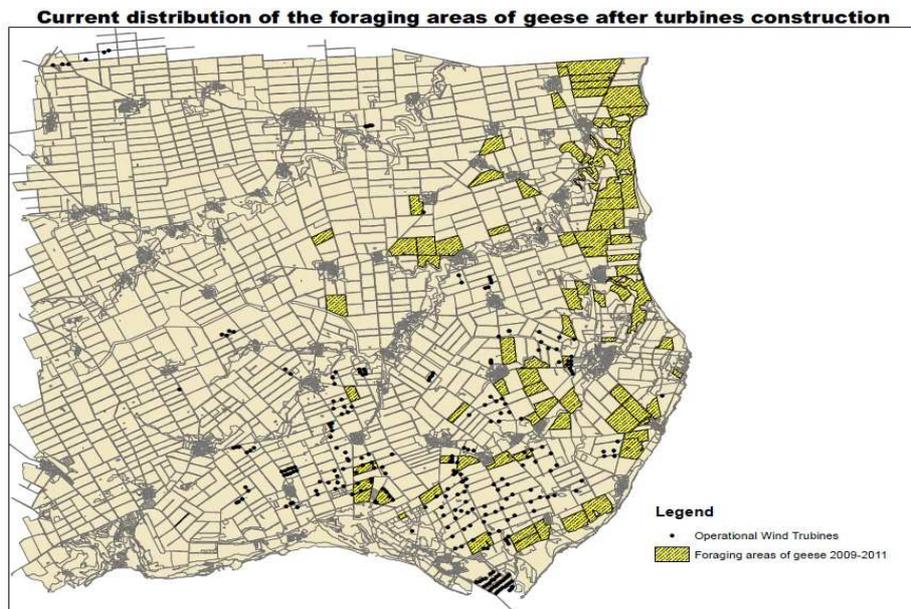


Fig.8 – Distribution of foraging flocks of wintering geese in Coastal Dobrudzha in winter 2009-10 and 2010-11 with indicated already operational windfarms (as per August 2011).

What is obvious and easily picked up from the map is that there is obvious shift in the distribution compared to the pre construction period (Fig.7). The most significant changes in the distribution of foraging flocks is observed in the area of Kavarna and Shabla municipalities, including the AES windfarm area. This precise windfarm area has been subject to specific monitoring activities. As it is reported by the filed ornithological team hired by the investor currently there is little or no use of the fields situated between the wind turbines and most of the flocks observed within the land of the AES windfarm area are 300-400m away from the actual turbines and no report of flocks of redbreasted geese entering the area of the windfarm (Zehinjev & Whitfield, 2011). The distance which is reported by the field workers is indicative for displacement as geese and other waterbirds are known to avoid turbine structures to more 100m. Hence, avoidance may incur additional travel costs (extra energy costs and predation risks associated with the travel, e.g. due to hunting) and cause fragmentation of the potential area to a degree affecting the overall quality of the area.

The data collected in the pre-construction period and post-construction covers two consecutive years of data, which compensates for issue of crop rotation which might deviate and impact the

distribution of the foraging birds in the area. It should be noted that the numbers of geese were considerably higher during the preconstruction period when the first data set was collected. However the changes in the numbers should be regarded in the light of the declining population of the Red-breasted Goose, which has declined almost two fold since the end of the 1990s. Therefore it may no longer be expected to have concentrations of 60 to 70 000 birds, while the global population is estimated in the range of 35 000 to 40 000 birds (Cranswick *et al*, 2011). We should also point out that this is the most extensive set of data available on geese in the area gathered by the BSPB and is looking into the wider picture rather than the specific wind turbine projects. Therefore on the basis of the available data we conducted Kernel Density Estimate analysis to alleviate the key concentration areas of foraging flocks of wintering geese in the pre and post construction period.

The spatial data analysis revealed considerable shift in the density of the distribution of foraging flocks of Red-breasted Goose and other wintering geese species. There is generally good evidence of displacement of birds around wind farms occurring in coastal habitats, most of it relate to waterfowl, where the birds were displaced over distances of up to 800m (wintering birds) and 300m (breeding birds) (Percival 2003). Therefore the current results coincide with results from other studies and observations done on other species of geese and waterfowl. In general the results show that the wintering flocks avoid landing in crop fields with wind turbines or if they land in such fields the spacing between them is from 800 to 1000m. The average minimum distance has increased with more than 1000m suggesting displacement effect of the wind farms in the region of coastal Dobrudgea (Petkov *et al.*, *in prep.*). The data is showing increased significance in terms of grazing flocks density in the area around Durankulak Lake and decreased importance of the Shabla Lake and Kavarna area. The shift cannot be attributed to crop rotation as the analysis is based on two consecutive seasons compensating for the crop rotation. Further crop type could not be the leading cause for such changes as the introduction of oil seed rape as wheat is still seeded actively within the windfarms fields. Both recent winters though they had quite late start have had significant cold spell and wintering geese have moved down further south in significant numbers which do not support a theory for shift Northwards due to warming up of climate and more mild winters. In winter of 2009-10 there was significant snow spell which drove down significant numbers of geese including some high numbers of Red-breasts.

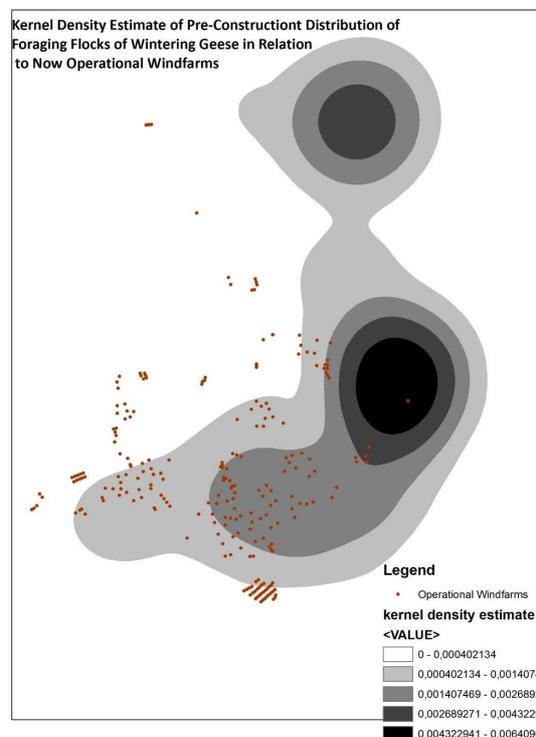


Fig.9 – Kernel Density Estimate analysis of the geese foraging flock distribution in the pre-construction period and the distribution of currently operating wind turbines in relation to it (after Petkov *et al*, *in prep.*).

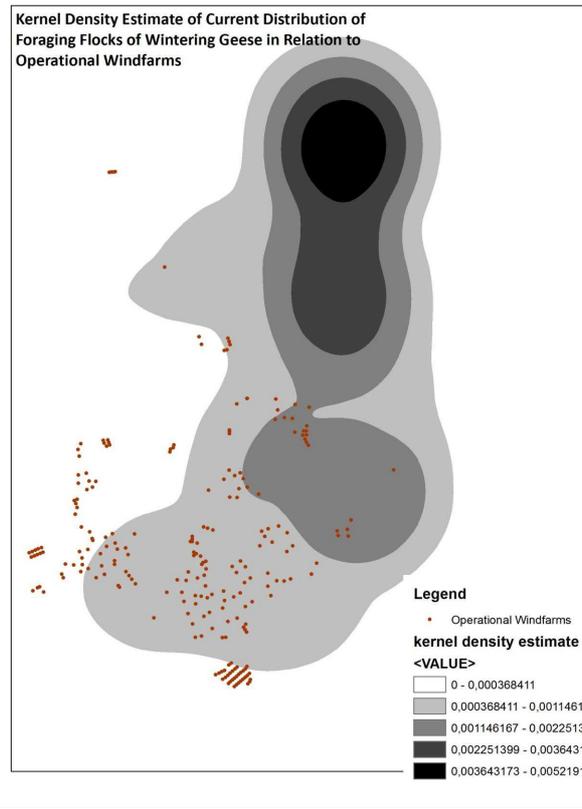


Fig.10 – Kernel Density Estimate of current distribution of Foraging flocks of wintering geese including Red-breasted Goose in relation to operational windfarms (after Petkov et al., in prep.)

The winter of 200-11 could be characterized in similar way with late start with mild temperatures and shifts of large flocks of geese up North and down South, but still there were conditions for forming a significant concentration of wintering Greater White-fronts further south in Burgas Lakes complex which suggest that temperature alone could not be a driving factor for distribution of the foraging geese. We have to acknowledge that the changes of the spatial distribution could be result of some combination of factors, but the influence on the shift in distribution due to windfarm development could not be played down. In January 2012 during accidental observations of geese flocks landing in vicinity (ca. >500m away) of a turbine, situated behind a tree line showed avoidance behavior when after gliding towards the field they were about 1000m away from the turbine. This act was observed twice for two different flocks of Greater White Fronts and Redbreasts. When flushed from the same field the birds first soared over the same field till they gathered height and only when being 50-100m higher than the height of the turbine flew away in a direction opposite to the position of the wind turbine. This happened south form the village of Tyulenovo. However much further and lot more qualitative and quantitative information and data should be collected to assess appropriately the impact of the windfarms on the wintering geese populations in the Coastal Dobrudga. There are number of similar observations, but we hope the field studies on the impact of windfarms on the behavior and flights of the wintering geese that have started since this winter season (2011-12) would allow and reveal some insight into the problem. If we look in the further perspective not focusing only on the operational wind turbines, but those with consent for construction or approved EIA the picture looks much more serious and waves away the doubts over factors like temperature or hunting pressure that might be involved in the impact on the species (Fig. 11, Fig. 12)

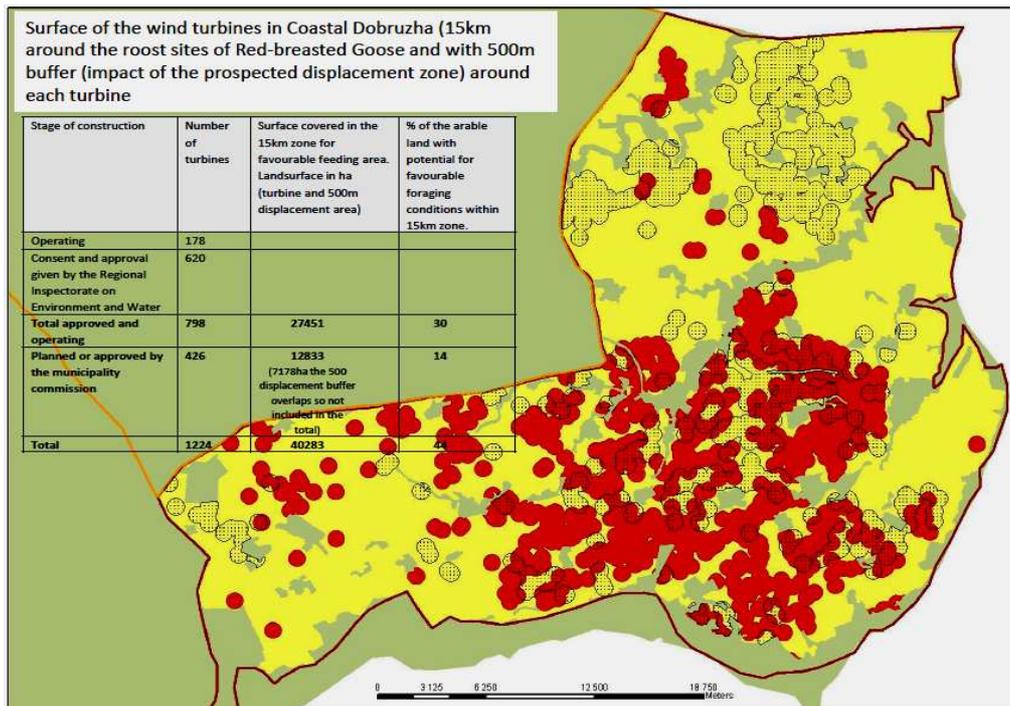


Fig. 11 – Distribution of operating windfarms, windfarms with approved EIA or given consent for construction in Coastal Dobrudzha with included 500m buffer of displacement impact.

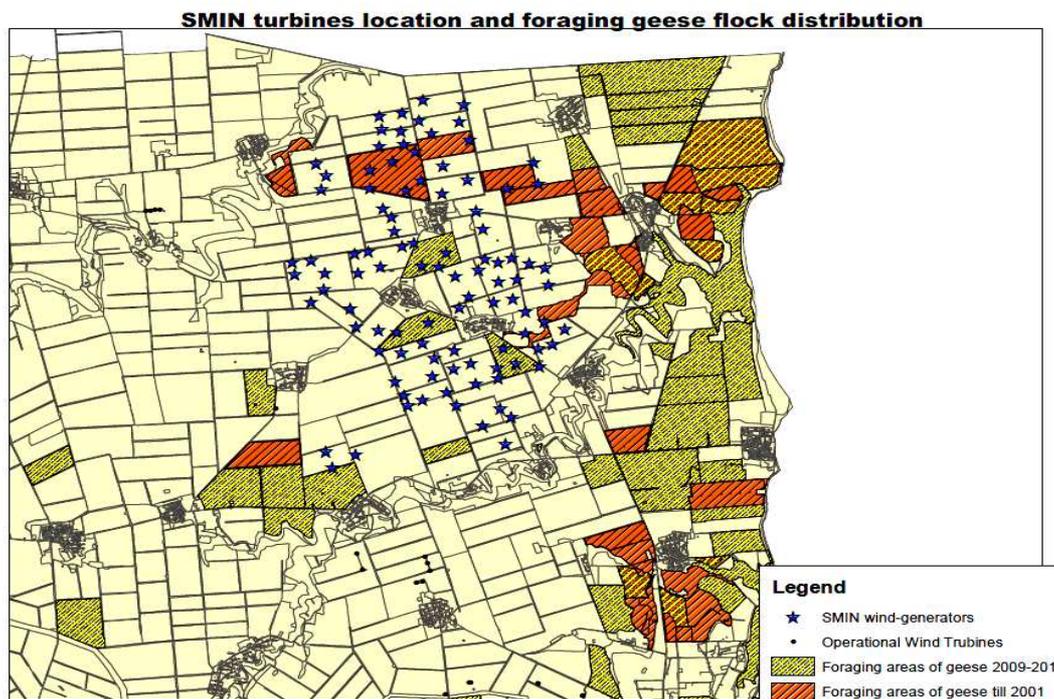


Fig.12 – Position of the newly proposed SMIN windfarm with approved EIA in immediate vicinity of Durankulak Lake SPA and position in regard to foraging areas of Red-breasted Geese.

CONCLUSIONS

We can assume that despite the changes in the absolute numbers of wintering Red-breasted Geese the region of Bulgarian Coastal Dobrudga and the vicinity of Durankulak and Shabla Lakes SPAs remain key sites for wintering concentrations. Durankulak Lake SPA and the adjacent crop fields hold on a regular base significant percent of the global population of the IUCN Endangered Red-breasted Goose.

The selection of foraging area and interaction and linkages between roosting sites and foraging fields is not yet fully understood and precautionary principle should be applied in this regard.

There is some evidence of displacement impact of windturbines in the area of Shabla and Kavarna Municipalities. If the current rate of inappropriate location and planning of windfarm development continues it could endanger the global population of the Red-breasted Goose.

The impact of the windfarm development should be considered and assessed in addition to tourist development proposals, related infrastructure, crop rotation and introduction of new technical crops in the area.

The displacement impact of the windturbines in the area and the barrier effect of the turbines on the flight directions and flight behavior on geese should be considered and assessed in combination with hunting pressure and crop rotation which all together could increase significantly the energy cost of survival for the species and compromise the integrity and suitability of the wintering grounds in Coastal Dobrudga and impact the global population of the Red-breasted Goose and significant percent of the “Ponto-Anatolian” flyway population of the Greater White-fronted Goose (*Anser albifrons*), “rubrirostris, Black Sea – Turkey” flyway population of the Graylag Goose (*Anser anser*) and the globally threatened Lesser White-fronted Goose (*Anser erythropus*).

Evidence show that some species of geese habituate to the wind turbines in the landscape eventually, but this is unknown process which takes a lot of time – might be over 10 years i.e. Madsen & Boertmann (2008), but it also depends on the size of the turbines with windparks with the size of Kaliakra turbines of 2 MW could take longer. This should be considered however in the perspective of the declining population of the Red-breasted Goose and being the most endangered goose species in the World today according to the IUCN status and it might not have that much time for habituation.