Dear Volunteers,

Here comes our traditional end of field season email (yes, it has been a while already, but better now than never!)



First of all, we would like to thanks all of you again, for the dedication you placed helping us every day, even under harsh conditions. The ones who joined us at the end of the season knows how bad it has been, having snowstorm in the middle of July! You had been such great support with your enthusiasm and humor, even in the hardest conditions!

This year had been a very successful year, in terms of survival and birth! We captured 141 adult marmots and 96 pups, and we had quite a lot of recaptures. With the help of the transponder portal, we also managed to monitor several families (and got the identity to the males in N2 and A!), and some of you met the geometers team who started to map the burrows. We finished the smell experiments started 2 years ago, and got enough samples (thanks to your patience and reactivity!) to run corresponding analyses.

Surprisingly (especially because this year was warm and sunny early in the season, and everything was really in advance compared to previous years) first emergence of pups was still quite late... We would like to warmly thank all of you who spent hours, days, weeks... looking at empty holes, searching for pup's noses, fighting against yourself to keep awake, against pouring rain to keep dry, and against terrible wind and cold to keep warm...

Unfortunately this year pups from A, B-fac and H never showed up... So the ones who were wondering, be relieved, you really did a great job, it's just unfortunate that they never showed up... We also never caught males in A, Imilieu, C, N2 and P3 (We can see your faces trying hard to remember which territories we're talking about..). I guess, these guys are definitely cleverer than us!

Beyond the hard work that these conditions brought to us, this is extremely interesting from a scientific point of you. The credit to the climatic models which predict more and more unusual year with extreme climatic events is even more confirmed (we already had a really interesting situation last year). Second, the response of the marmot was rather unexpected since with the good early conditions, we expected them to emerge as usual, and got surprised when they appeared almost at the same period than last year (which was the first time in 23 years that pups emerged with more than 1 day difference).

The number of pups captured this year is just amazing! Survival rate was incredibly high, we had almost twice the number than last year... This winter had been really favorable, and we expect to find a lot of them next spring!

Cindy's project was a great success, she retrieved all the devices she implanted last year, and managed to use all the loggers she had to collect even more data. This study will end next summer, and we can't wait to see the results... It would be a very interesting analyze to correlate it with all the other data we have like hobo temperature and luminosity, or family structure and behavior. So yes, these territories were realllllly high, with horrific steep slope, but it worth it! (and remember, it was the prettiest view ever!)

We are still running our small NGO to support the project and I hope you will soon be part of it. Our first action, will be to sell calendar for 2015. They are 20\*29cm calendar with one page per month and a nice photo on each page. We will sell them 25€ (we will soon launch a webpage where you can pay for them by paypal) and all the benefits will go to the NGO to buy a professional weather station and 4 camera traps to monitor closely the weather, with snow cover and the emergence date of the different families, a bench of new hobo loggers to continue to record temperature and luminosity inside burrows, a new transponder reader with an extra antenna for each reader, to monitor several families without capture.

To avoid ordering more calendar than we can sell, We would like you to tell us whether you are interested and how many calendar you would like to order (as well as the name and address where you want us to send them). If you can tell us before the 25th of November this would be perfect (like that we are sure that everything will be under the tree for Christmas). We now it is a short notice but marmots are keeping us really busy..

Our marmots are now nicely snoring in their burrow while we are working hard on the data you have been collected. This autumn has been very fruitful and two articles have now been publish on the marmots work. You can keep following our adventure on the what's new section of the website ([http://projetmarmottealpine.wordpress.com/](https://accesbv.univ-lyon1.fr/owa/redir.aspx?C=iCvlSfQZ60W1nfPqNL0TGsR67LoWxtEIyXVqj8E_5yFJ904Cx9nTgSeytrpX92Ixp17wz8fGaY0.&URL=http%3A%2F%2Fprojetmarmottealpine.wordpress.com%2F)) and on the facebook page (<http://www.facebook.com/pages/The-Alpine-Marmot-Project/152263534897809>).

The Alpine marmot project had been very successful, and our 3 pHD students, Vérane Berger, Pierre Dupont and Célia Rezouki are working on their data. (Verane on aging in social species, and especially in marmots, Pierre on the impact of sociality on the survival and reproductive output of marmots and how it can mitigate climate effect, and Célia on how climate change affect three species of Alpine mammals, the ibex, the chamois and of course our beloved marmot, trying to understand why not all species react the same.)

Our findings were published in several scientific reviews, and also in French local journal. For the one interested here are the link to these publications:

* Tafani M., Cohas A., Bonenfant C., Gaillard J.-M., Allainé D. (2013) Decreasing litter size of marmots over time: a life-history response to climate change? **Ecology**, 94:580–586. <http://projetmarmottealpine.files.wordpress.com/2012/12/tafani2012.pdf>
* Tafani M., Cohas A., Bonenfant C., Gaillard J.-M., Lardy S., Allainé D. Sex-specific senescence in body mass of a monogamous and monomorphic mammal: the case of Alpine marmots. **Oecologia**, 172:427–436.

<http://thealpinemarmotproject.files.wordpress.com/2013/05/tafani2013.pdf>

* Kuduk K., Johanet A., Allainé D., Cohas A., Radwan J. (2012) Contrasting patterns of selection acting on MHC class I and class II DRB genes inthe Alpine marmot (*Marmota marmota*). **Journal of Evolutionary Biology**, 25: 1686-1693.

 <http://thealpinemarmotproject.files.wordpress.com/2012/08/kuduk2012.pdf>

* Lardy S., Cohas A., Desouhant E., Tafani M., Allainé D. (2012) Paternity and dominance loss in male breeders : the cost of helpers in a cooperatively breeding mammal. **PLoS One 7**: e29508. doi:10.1371/journal.pone.0029508.

<http://thealpinemarmotproject.files.wordpress.com/2012/08/lardy2012.pdf>

You know that we could talk about the marmots and the Alpine marmot project for hours! But we don't want you to end up bored ;-)

Best regards to all of you!

The marmot team.

PS: We would love to improve the website and facebook page of the project with your pictures and videaos if you did'nt had the time to share them with us yet. Could you please upload it at the following link: <http://umr5558-bddeco.univ-lyon1.fr/>

login: [earthwatch@gmail.com](https://accesbv.univ-lyon1.fr/owa/redir.aspx?C=iCvlSfQZ60W1nfPqNL0TGsR67LoWxtEIyXVqj8E_5yFJ904Cx9nTgSeytrpX92Ixp17wz8fGaY0.&URL=mailto%3Aearthwatch%40gmail.com) password: volunteer

Once in, you click on the left on project\_earthwatch, then on document.

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