

Portugal Forest Fires and Climate Change Adaptation

March 5-10, 2018

Kelvin Hirsch*

Trip Report:

At the request of the Portuguese government (specifically the Special Unit on Integrated Rural and Wildfire Management) and with the logistical support and financial assistance (for travel expenses) of the Canadian Embassy, Kelvin Hirsch, spent 5 days in Portugal from March 5-10, 2018. The objectives of the visit were:

- a) to meet with staff from several Portuguese government departments and visit areas impacted by the devastating wildfires of June and October of 2017 in order to view the effects of the fires, understand the challenges of fire management under a changing climate, and discuss possible options to avoid potential catastrophic events in the future, and
- b) to share best practices and lessons learned associated with fire management and climate change adaptation in Canada, particularly the development of the FireSmart program.

The primary contacts with the Portuguese government were:

- Special Unit on Integrated Rural and Wildfire Management
 - Tiago Oliveira, Unit Head
 - Paulo Mateus, Technical Advisor
 - Catarina Antunes, Communications Advisor
 - Ana Diogo, Analyst
- Instituto da Conservação da Natureza e das Florestas
 - Joao Pinho, Technical Leader
- Gabinete do Secretario de Estado da Protecção Civil
 - Jorge Barbosa, Advisor
- Civil Protection National Authority
 - Pedro Nunes, Operational Commander, North Central District

The 5-day program (see Appendix 1) was both extensive and intensive. It included visiting sites in the central region of Portugal (see Figure 1) including: the unburned forest to obtain a sense of the forest vegetation (also known as fuels), different sized communities to see the degree of risk to homes and businesses, and areas burned in the fire to understand their size and intensity. While driving and at various stops, including Alvarez and Pedrogão, there was continuous conversation and a substantive exchange of information.

During the week four customized presentations were given to a range of audiences as follows:

1. *Wildland Fire Management and Governance in Canada: An Overview* --- This presentation was given at INESC-TEC in Porto. The seminar was organized by Professor João Claro and was attended by about 30 people including university staff and students as well as representatives from several agencies involved in fire management (see Appendix 2).
2. *Being FireSmart: Protecting your community from wildfire* (long version) --- This was a 1-hour presentation made during a workshop held in Pedrogão with individuals from the local Victims Association (Associação de Vítimas do Incêndio de Pedrógão Grande). Two other presentations were made at the workshop by Nadia Piazza, whose is leading the victims association and whose husband and son died in the fires, and by Professor Domingos Xavier Viegas from the University of Coimbra. This was followed by an open discussion with community members led by Tiago Oliveira. Approximately 25 people attended.

3. *Being FireSmart: Protecting your community from wildfire* (short version) --- This was a 30-minute presentation given at the Gulbenkian Centre in Lisbon. It was part of a special seminar that included three other speakers from local universities and an address by the Prime Minister of Portugal (see Appendix 3). It was attended by several Ministers and senior officials of the government as well as many members of the Civil Defense and National Guard. Attendance is estimated at 125 people.
4. *Climate Change Adaptation and Sustainable Forest Management in Canada* --- This final presentation was given at an inaugural, day long conference on climate change for the Professional Engineers Association of Portugal (see Appendix 4). The presentation included examples of Canadian approaches and tools for adapting sustainable forest management practices for climate change and had some information on forest fires. The session was attended by about 150 people and was lived streamed to association members.

The final afternoon there was a debriefing with Tiago Oliveira and members of his team from the Special Unit on Integrated Rural and Wildfire Management. In addition, several media interviews were conducted with stories running in numerous newspapers and there was one television interview with SIC, Portugal's national broadcaster (see Appendix 5).

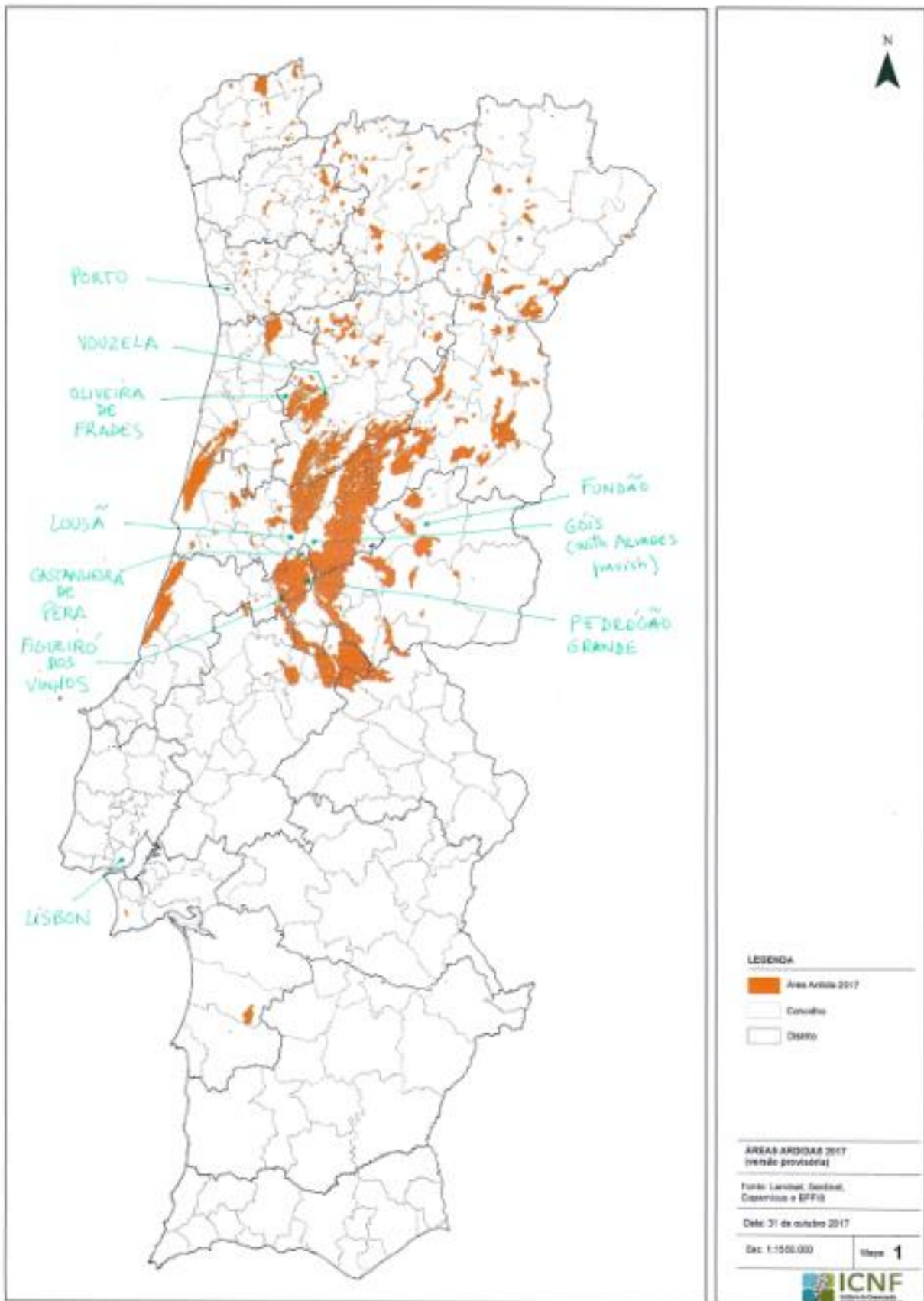
During the week the discussions and the presentations focused on best practices in Canada and emphasis was placed on the important role that communities have in reducing their risk from wildfire, especially in minimizing the flammability of structures and clearing vegetation and other flammable materials within 10 m of their homes. Also it was stressed that there are seven disciplines identified in the FireSmart manual (<https://www.firesmartcanada.ca/resources-library/protecting-your-community-from-wildfire>) which if followed can significantly reduce the risk from wildfire to a community but it can never reach zero. Furthermore, it was indicated that in Canada the actions taken by communities have been greatly enhanced by support from other levels of government. These messages clearly resonated with the Portuguese government officials directly involved with this visit. All presentations as well as a substantial number of other reports and research papers were left with the Special Unit staff for their reference.

As a follow-up, the Special Unit requested that names of individuals in Canada who have skills in specific aspects of fire management (e.g., forest fire operations, fuels management, fire meteorology) be forwarded to them in early April as they are interested in inviting such specialists to Portugal this summer to share their expertise. Given summer is also fire season in Canada most of the contacts will be individuals who are recently retired but have vast amounts of experience. It was also suggested to the Special Unit team that the Portuguese government may want to have technical experts from Portugal come to Canada during the fire season to shadow Canadians in the same types of positions and also the government may wish to sponsor representatives from the community association(s) to meet with counterparts in Canada (such as Logan Lake, BC) to facilitate direct and effective information exchange.

Special thanks are extended to the Canadian Embassy for their support of this trip, especially Ambassador Jeffrey Marder, Joel Monfils, Fatima Carvalho, Sandro Almeida, and Isabel Inacio.

* Kelvin Hirsch (kmhirsch2@gmail.com) worked with Natural Resources Canada, Canadian Forest Service for 33+ years and retired in May of 2017. During his career he conducted forest fire research, was directly involved in the development of the FireSmart Manual and the Canadian Wildland Fire Strategy. He also served as the Director of the Climate Change and Forests program at the Northern Forestry Centre in Edmonton, Alberta for 9 years. Kelvin first visited Portugal in 1998 to attend a fire conference and then returned in May of 2005 at the request of the Embassy to hold meetings with Portuguese officials and give a presentation on the Canadian Wildland Fire Strategy.

Figure 1: 2017 Portugal wildfires and sites visited with Kelvin Hirsch



APPENDIX 1

Kelvin Hirsch's Visit - Daily (day 1 to day 5)

Day 1 – 5th March

| | |
|-----------|--|
| 1500 | Arrive in Oporto – Meeting with Paulo Mateus (note: due to travel delays adjustments were made to the itinerary for day 1 and site visits to the Mata Nacional de Leiria (a pine plantation started in the 13 th century) were not possible) |
| overnight | OPO Bolhao Apartments 397, Sá da Bandeira (Oporto) |

Day 2 – 6th March

| | |
|-----------|---|
| Pick-up | Paulo Mateus and João Pinho |
| 10:30 am | CoLAB ForestWISE Workshop wildfire risk governance and management (Oporto INESC-TEC) Seminar - Canadian Wildland Fire Management in Canada: An Overview by Kelvin Hirsch |
| afternoon | Last October burnt areas tour: Serra do Caramulo (Oliveira de Frades and Vouzela) and Mondego River basin (includes Oliveira do Hospital) |
| overnight | Centro de Operações e Técnicas Florestais, Lousã |

Day 3 – 7th March

| | |
|-----------|---|
| Pick-up | Paulo Mateus and João Pinho |
| morning | Burnt areas tour: Alvarez (media interview) and Pedrogão Grande |
| 2:30 pm | Workshop - Being FireSmart: Protecting your community from wildfire by Kelvin Hirsch Meeting at Pedrogão Grande Wildfire Victims Society headquarters; approximately 25 pax |
| overnight | Car travel return to Lisbon with João Pinho (ETA 8:30pm) Hotel Vinci Liberdade |

Day 4 – 8th March

| | |
|-----------|--|
| 11:30 am | Meeting with Canadian Embassy trade commissioners (Fatima Carvalho and Sandro Almeida) and Canadian Ambassador (Jeffry Marder) |
| Noon | Lunch with Fatima and Joël Monfils |
| 2:00 pm | Pick up transfer (driver António Figueira) (Hotel – Gulbenkian Foundation) Catarina Antunes |
| 2:30 pm | From menace to coexistence: safe communities in wildfire scenario |
| 2:40 pm | Canada's Ambassador Opening |
| 3:20 pm | Kelvin Hirsch intervention: Being FireSmart: Protecting your community from wildfire |
| 5:00 pm | Closing Remarks: Portuguese Prime Minister Antonio Costa |
| overnight | Lisbon Hotel Vinci Liberdade |

Day 5 – 9th March

| | |
|-------------|---|
| 10:30 | Ana Diogo (driver António Figueira) (Hotel – Order of Engineers) |
| 11-11:30 am | Workshop Portuguese Order of Engineers "2018 – The OE's year for Climate Change" - Kelvin's topic – Climate Change Adaptation and Sustainable Forest Management in Canada. |
| Lunch | Lunch to debrief with Tiago and members of the Special Unit for Integrated Rural and Wildfire Management. |
| overnight | Lisbon Hotel Vinci Liberdade |

APPENDIX 2

Auditório INESC TEC | 6 de março de 2018 | 10.30 horas

Workshop "Wildfire Management and Governance" com Kelvin Hirsch

| Nome participante | Instituição | E-mail |
|----------------------------|--------------|--|
| João Claro | INESC TEC | joao.claro@inesctec.pt |
| José Manuel Mendonça | INESC TEC | jose.m.mendonca@inesctec.pt |
| Abílio Pacheco | INESC TEC | abilio.p.pacheco@inesctec.pt |
| José Coelho Rodrigues | INESC TEC | jose.c.rodrigues@inesctec.pt |
| Alexandra Marques | INESC TEC | alexandra.s.marques@inesctec.pt |
| Fantina Maria Santos Tedim | FLUP | ftedim@letras.up.pt |
| Cristina Queirós | FPCEUP | cqueiros@fpce.up.pt |
| António Salgueiro | | salgueiro.a@gmail.com |
| Fernando Correia | FLUP | N/A |
| Catarina Magalhães | FLUP | N/A |
| Dominic Royé | FLUP | N/A |
| JA Gonçalves | GTF Valongo | gtf.valongo@gmail.com |
| Isolete Matos | Sonae | isolete.matos@sonaeindustria.com |
| Verónica Catarino | ENB | veronica.catarino@enb.pt |
| Paulo Bessa | GTF Penafiel | paulo.bessa@cm-penafiel.pt |
| Artur Costa | GTF Seia | gtf@cm-seia.pt |
| Miguel Rodrigues | GTF Paredes | miguel.rodrigues@cm-paredes.pt |
| Vítor Tito | BBZ | vitortito@bbz.pt |
| Rosário Alves | Forestis | r.alves@forestis.pt |
| Paulo Mateus | AGIF | |
| João Pinho | ICNF | |
| Pedro Nunes | ANCP | |
| Jorge Barbosa | G SEPC | |

APPENDIX 3 PROGRAMA

Da ameaça à convivência: a proteção das comunidades em cenário de incêndio rural

Auditório 3, Fundação Calouste Gulbenkian

| | | |
|-----------------|--|--|
| 14:15- 14:30 | RECEPÇÃO DE PARTICIPANTES | |
| 14:30 14:40 | ABERTURA Dra. Luísa Valle, Engº Tiago Oliveira | F. Calouste Gulbenkian Estrutura de Missão |
| 14:40 15:30 | Being FireSmart: Protecting your community from wildfire <ul style="list-style-type: none"> o impacto das alterações climáticas as medidas de adaptação em curso para as florestas canadianas e como está a ser reorganizado o sistema de prevenção combate o programa de aldeias adaptadas ao fogo (firesmart) | Kelvin Hirsch |
| 15:30 15:50 | Alterações climáticas em Portugal <ul style="list-style-type: none"> Impactos na floresta e nos incêndios Que medidas estão previstas e que deviam ser reforçadas Ensino de um roteiro de implementação | Filipe Duarte Santos (Faculdade Ciências / U.Lisboa) |
| 15:50 16:10 | A história de resiliência da Aldeia de Alvares (Góis) <ul style="list-style-type: none"> Contexto socioeconómico 100 anos e história dos fogos 1975-2017 Avaliação do risco, exposição e vulnerabilidade Proposta de atuação para a freguesia e custos económicos | José Miguel Cardoso Pereira (ISA / U.Lisboa) |
| 16:10 16:30 | Modelos de gestão para espaços rurais <ul style="list-style-type: none"> O colapso da agricultura tradicional e os desafios da sociedade global e sustentabilidade As falhas de mercado na valorização de bens e serviços não lenhosos gerados pelos espaços florestais Exemplos de modelos de gestão e de financiamento | José Manuel Lima Santos (ISA / U. Lisboa) |
| 16:30 17:15 | Perguntas e Respostas aos oradores acima, com debate moderado | Ana Fernandes (Público) |
| 17:15 17:30 | Encerramento | Senhor Primeiro Ministro |

APPENDIX 4



ORDEM
DOS
ENGENHEIROS



ano OE das alterações climáticas

CONFERÊNCIA INAUGURAL

2018 - ANO OE DAS ALTERAÇÕES CLIMÁTICAS

09/03/2018

09h15

RECEÇÃO DOS PARTICIPANTES

09h30

SESSÃO DE ABERTURA

APRESENTAÇÃO DO "2018 - ANO OE DAS ALTERAÇÕES CLIMÁTICAS"

Carlos Mineiro Aires, Bastonário da Ordem dos Engenheiros

ALTERAÇÕES CLIMÁTICAS – DESAFIOS E POLÍTICAS

João Pedro Matos Fernandes, Ministro do Ambiente

10h30

ALTERAÇÕES CLIMÁTICAS

Filipe Duarte Santos, Presidente do Conselho Nacional do Ambiente e do Desenvolvimento Sustentável (CNADS)

11h00

CLIMATE CHANGE ADAPTATION AND SUSTAINABLE FOREST MANAGEMENT IN CANADA

Kelvin Hirsch, Canada CFS Climate Change Adaptation Project Coordinator

11h30

INTERVALO

11h50

GÉNESE E ENSINO DAS PREOCUPAÇÕES AMBIENTAIS EM PORTUGAL

Fernando Santana, Diretor da FCT-UNL

12h20

APRESENTAÇÃO DO LIVRO DO GRUPO DE TRABALHO DO LITORAL

Filipe Duarte Santos

12h40

ALMOÇO

14h30

ALTERAÇÕES CLIMÁTICAS – PAPEL DA ENGENHARIA

Miguel de Castro Neto, Presidente do Colégio Nacional de Engenharia Agrónómica da Ordem dos Engenheiros

14h50

ALTERAÇÕES CLIMÁTICAS: DESAFIOS E OPORTUNIDADES DO RECURSO AR

Carlos Borrego, Universidade de Aveiro

15h10

ALTERAÇÕES CLIMÁTICAS: O RECURSO ÁGUA

António Carmona Rodrigues, FCT/UNL

15h30

DEBATE

16h00

INTERVALO

16h30

**O DESAFIO DA NEUTRALIDADE CARBÓNICA PARA A
GESTÃO EMPRESARIAL**

Pedro Martins Barata, Get2C

16h50

**REDES ELÉTRICAS INTELIGENTES – EFICIÊNCIA
ENERGÉTICA**

João Torres, Presidente da EDP Distribuição

17h10

DEBATE

17h40

**LANÇAMENTO DO PRÉMIO “ENGENHEIRO
EMPREENDEDOR 2018 – ANO OE DAS ALTERAÇÕES CLIMÁTICAS”**

18h00

ENCERRAMENTO

Carlos Mineiro Aires, Bastonário da Ordem dos Engenheiros

José Mendes, Secretário de Estado Adjunto e do Ambiente

APPENDIX 5

Media stories during Kelvin Hirsch's visit to Portugal, March 5-10, 2018

Newspapers

<http://www.ambientemagazine.com/area-ardida-em-portugal-pode-ser-duas-a-tres-vezes-superior-em-2075/>

<http://agriculturaemar.com/estrutura-de-missao-promove-seminario-sobre-incendios-florestais/>

<https://www.dn.pt/lusa/interior/incendio-area-ardida--pode-ser-duas-ou-tres-vezes-superior-em-2075---especialista-9172405.html>

<http://www.distrionline.pt/sociedade/3557-estrutura-de-missao-traz-experiencia-do-canada-a-pedrogao>

<https://www.jn.pt/lusa/interior/incendio-area-ardida--pode-ser-duas-ou-tres-vezes-superior-em-2075---especialista-9172407.html>

<https://www.noticiasaminuto.com/pais/970031/area-ardida-pode-ser-duas-ou-tres-vezes-superior-em-2075>

<https://www.noticiasdecoimbra.pt/area-ardida-pode-duas-tres-vezes-superior-nada-mudar-no-combate-aos-fogos/>

<https://www.publico.pt/2018/03/08/politica/noticia/estamos-no-meio-de-tres-furacoes-1805941>

<https://www.publico.pt/2018/03/08/sociedade/noticia/somos-um-hot-spot-das-alteracoes-climaticas-1805902>

<http://24.sapo.pt/atualidade/artigos/em-2075-as-areas-ardidas-podem-ser-duas-ou-tres-vezes-maiores-do-que-o-presente-diz-especialista>

<http://sicnoticias.sapo.pt/economia/2018-03-08-Hoje-e-noticia>

<http://sicnoticias.sapo.pt/pais/2018-03-08-Area-ardidapode-ser-duas-ou-tres-vezes-superior-em-2075>

<https://www.tsf.pt/lusa/interior/incendio-area-ardida--pode-ser-duas-ou-tres-vezes-superior-em-2075---especialista-9172406.html>

<http://pt.cision.com/cp2013/clippingdetails.aspx?id=20c9bb0a-ccfd-4289-a486-47f33a66252f&userId=4737BBCC-35B0-48E3-ABA9-1F976A90591A>

<http://www.ruadireita.pt/ultima-hora/da-ameaca-a-convivencia-a-protecao-das-comunidades-em-cenario-de-incendio-rural-22292.html>

<https://jornalacores9.pt/laboratorio-para-gestao-da-floresta-e-dos-fogos-arranca-em-abril/>

<http://www.acorianooriental.pt/noticia/especialista-defende-educacao-e-gestao-da-vegetacao-para-prevencao-eficaz-de-fogos-286703>

<http://www.ambientemagazine.com/especialista-defende-educacao-e-gestao-da-vegetacao-para-prevencao-eficaz-de-fogos/>

<https://www.dn.pt/lusa/interior/especialista-defende-educacao-e-gestao-da-vegetacao-para-prevencao-eficaz-de-fogos-9164274.html>

<https://www.ojogo.pt/extra/lusa/interior/especialista-defende-educacao-e-gestao-da-vegetacao-para-prevencao-eficaz-de-fogos-9164277.html>

<https://www.jn.pt/lusa/interior/especialista-defende-educacao-e-gestao-da-vegetacao-para-prevencao-eficaz-de-fogos-9164276.html>

<https://www.noticiasaminuto.com/pais/968033/especialista-defende-educacao-e-gestao-da-vegetacao-para-prevencao>

<http://observador.pt/2018/03/06/especialista-defende-educacao-e-gestao-da-vegetacao-para-prevencao-eficaz-de-fogos/>

<https://www.tsf.pt/lusa/interior/especialista-defende-educacao-e-gestao-da-vegetacao-para-prevencao-eficaz-de-fogos-9164275.html>

<http://agriculturaemar.com/perito-canadiano-incendios-rurais-vem-portugal-participar-workshop/>

<http://noticias.up.pt/inesc-tec-lidera-laboratorio-colaborativo-da-floresta-e-do-fogo/>

<http://expresso.sapo.pt/sociedade/2018-03-03-Kelvin-Hirsch-E-impossivel-atingir-o-nivel-zero-de-risco-mas-o-risco-pode-ser-diminuido>

<http://expresso.sapo.pt/sociedade/2018-03-11-Aprender-a-estar-preparado-para-o-fogo#gs.5Lv1XE>

Television

<http://sicnoticias.sapo.pt/pais/2018-03-10-Perito-em-incendios-surpreendido-por-encontrar-especies-muito-inflamaveis-em-Portugal>

<http://sicnoticias.sapo.pt/pais/2018-03-10-Temos-de-aprender-a-trabalhar-com-a-Natureza-porque-a-Natureza-ganha-sempre>

<http://pt.cision.com/cp2013/clippingdetails.aspx?id=5b919e41-d3b5-4e49-810d-f7cfa764c380&userId=4737BBCC-35B0-48E3-ABA9-1F976A90591A>

Video

<https://www.portugal.gov.pt/pt/gc21/primeiro-ministro/multimedia?m=v&p=1&i=primeiro-ministro-no-seminario-sobre-protecao-das-comunidades-em-cenario-de-incendio-rural>