

Background research for proposal to review the City of London's parks and recreation area by-law with respect to fireworks in ESAs

Written by Brendon Samuels, EEPAC Member.

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The City of London's fireworks by-law (40) includes the following restrictions on where fireworks may be detonated outdoors: "No person shall discharge any consumer fireworks in or on or into any park, highway, street, lane, square or other public place, unless under a display fireworks permit to do so issued by the Fire Chief." These restrictions make no mention of detonations from within or in close proximity to natural areas (such as ESAs). Although ESAs may be generally considered "public places" as already included in the by-law, more explicit wording is needed to deter individuals from detonating fireworks within or near ESAs. The city's by-law on fireworks was most recently amended in 2016. Being that the fireworks bylaw falls outside the work of the EEPAC, and further amendments to it would require input from many sources, it may be prudent for the committee to instead approach the issue of firework detonations in ESAs via the parks and recreation area by-law (41).

In its current form the city's parks by-law includes no references to fireworks, setting it apart from equivalent by-laws in other municipalities in Ontario which expressly prohibit the use of fireworks in parks. Under Part 5 of London's parks and recreation area by-law, section 5.4 lists prohibitions in ESAs including "(9) ... no person shall start or maintain a fire in an ESA or a natural park for any purpose except with the written authority of the Managing Director who may impose specific conditions which shall be adhered to." It seems reasonable that an additional restriction or prohibition could be made for the use of fireworks in ESAs. For the committee's review I have provided some relevant sources of information below about environmental effects of fireworks, including their impacts on humans and other animals, about alternatives to fireworks displays that may be of general interest, and about comparable by-laws in other municipalities.

There is a variety of anecdotal evidence to suggest that detonations of fireworks produce detrimental effects in both wild and domestic animals (1-5). Following the detonation of fireworks on holidays, animal care centres respond to a sharp increase in reported incidents of disturbed animals (6-8). Although there isn't much scientific research on the effects of fireworks specifically, loud anthropogenic noise is known to negatively impact behaviour of wild animals (9-10). For example, birds have been shown to react to fireworks by flying in darkness away from the source of the noise, risking collisions with structures like buildings (2, 11). There is also some evidence that incubating birds may abandon their nests upon exposure to fireworks (12). The negative effects of fireworks on wildlife have received considerable media attention in recent years (e.g., 13-16). In at least one recent case, a fireworks display was relocated to accommodate concerns about impacts on local wildlife (17).

Besides the welfare of animals, fireworks create a significant environmental stressor for many humans, including individuals with autism (18), as well as veterans and refugees who have experienced gun violence and live with post-traumatic stress disorder (19). Fireworks are a source of airborne pollutants and water contaminants including perchlorates and artificial dyes (20-22) and contain non-degradable plastics that may produce litter. Improper use of fireworks poses serious health risks to humans in the immediate vicinity, and detonation of fireworks in dry conditions may also increase the risk of fires (23). According to the Office of the Ontario Fire Marshal, fireworks caused 129 fires and almost \$2.5 million in damage in Ontario between 2009 and 2013. Fortunately, there are alternatives to fireworks that have been adopted elsewhere in light of these concerns. For example, the city of Banff, Alberta opted to replace its festive fireworks with quieter displays using lasers and music (24). There are also pyrotechnic technologies available that produce the same light effects as fireworks but with less acute noise.

By-laws concerning the use of fireworks are more rigorous in other provinces than in Ontario, particularly those vulnerable to forest fires. In Prince Edward Island (25), as well as several municipalities within Alberta including Banff, Canmore and Calgary (26-28), by-laws restrict the display, sale and possession of all fireworks to permit holders. Within the province of Ontario, by-laws concerning permitted venues and occasions for fireworks vary across municipalities. Several municipalities in Ontario have recently considered introducing tighter restrictions on the use of fireworks, including Huntsville (29), Dysart (30) and Brantford (30). The parks by-laws for many cities, including Toronto (32), Ottawa (33), Hamilton (34), Mississauga (35) and Windsor (36) expressly prohibit the use of fireworks in parks unless authorized by permit, whereas in London the use of display (not consumer) fireworks is restricted to permit-holders exclusively through the fireworks by-law. There are provisions in some by-laws that may restrict issuing of fireworks permits in light of environmental concerns. For example, the fireworks by-law of the city of Brampton authorizes the Fire Chief to apply absolute discretion to refuse a fireworks permit for a variety of reasons, including the proposed locale of the display and any environmental consideration (37). Fireworks are forbidden in all of Ontario's provincial parks (38). Internationally there are new laws emerging in places of ecological importance which entirely prohibit the use of fireworks out of consideration for their effects on wildlife (39).

In summary, the city of London already prohibits the detonation of fireworks in parks via the fireworks by-law, but there are insufficient protections in place to stop the detonation of fireworks in ESAs. The fireworks by-law distinguishes between consumer fireworks, which may be legally purchased and detonated by anyone over the age of 18 around the time of cultural celebrations, and display fireworks, which require a permit. The parks and recreation area bylaw includes no restrictions on detonations of fireworks in ESAs or in parks in general.

Note: Given that this matter has implications for animal welfare, it may be worthwhile to seek input from the animal welfare advisory committee for the city of London

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