

SEA LAMPREY CONTROL BOARD RESEARCH PRIORITIES

Below is a prioritized list of research priorities as ranked by the Sea Lamprey Control Board. This list should be used by investigators to develop research ideas and is considered during proposal evaluations. Investigators are not penalized for addressing lower ranked priorities on this list.

October 2017

1. How can we determine the specific stream, channel, or lentic area where an individual sea lamprey lived as a larva?
2. What are sea lamprey life stage survival rates and the factors that influence them?
3. What methods could be used to assess the density, distribution and occurrence of sea lamprey larvae more efficiently, e.g., remote sensing, water sampling (pheromone, e-DNA), modeling?
4. What are the key variables of a lampricide treatment that contribute to residual sea lamprey (i.e. those that survive treatment)?
5. How do the physiological, ecological, and biological characteristics of larval sea lampreys differ from other fish and do these characteristics represent unique vulnerabilities to exploit in developing new lampricides?
6. What are the physiological and population level effects of lampricide treatments on non-target organisms?
7. What is the potential efficacy of control measures targeting adult or juvenile sea lampreys?
8. What trapping designs or technologies will increase capture or retention of adult or juvenile sea lampreys?
9. What trap deployment strategies or behavioural manipulations will increase capture or retention of adult or juvenile sea lampreys?
10. What hydraulic/hydrologic characteristics of barrier/fishway designs most effectively facilitate passage needs, exploiting the natural behavior and motivation of sea lamprey and non-targets (native non-jumping species)?
11. What suite of technologies will block or guide sea lampreys, specifically electricity and water velocity. Technologies like chemical repellants, strobe lights, sound, bubble curtain, and temperature will also be considered.
12. What are the critical hydraulic and hydrological characteristics of safe barriers and integrated traps without reducing effectiveness?
13. What factors best predict the sea lamprey production levels of newly opened systems (barrier removal)?