	Population Ecology	Behavioral Ecology	Toxicology	Physiology	Genetics	Ch Cor
Population Ecology	Better understand drivers of population abundance at various sea lamprey life stages	Density-dependent behavioral responses	Population-level sublethal effects of lampricide treatment	Climate-induced changes in growth & condition	Quantitative assessment of sea lamprey abundance using genetic techniques (e.g., eDNA)	pherc st
	Behavioral Ecology	Identify aspects of sea lamprey behavior vulnerable to manipulation to improve sea lamprey control strategies	Avoidance behavior and possible contribution to lampricide resistance	Physiological drivers of behavior	Heritable basis for sea lamprey movement and behavior	M lamp
		Toxicology	Improve understanding of sea lamprey sensitivity to toxicants	Metabolism of lampricides	Use genomic data to inform next-generation lampricides	Olfact
Sea Lamprey Research Program			Physiology	Increase understanding of physiological processes of sea lamprey	Gene silencing as a control mechanism	Olfac che
fit within th Sea Lampre goal preser	nighlights broad examples of the ne research themes of the Great I ey Research Program. Each broad nted in the grey boxes. Investigat nples as inspiration to develop	akes Fishery Commission's concept has an overarching cors are encouraged to use		Genetics	Use genetic and molecular techniques to develop novel sea lamprey control strategies	RN/ chem
the Sea Lar	consult the research theme pape nprey Control Board (see links be esearch projects address one or n	elow) to explore how their	PARASITIC		osensory Communications	Pro ur coi de la
ecting Our Fishe.			NOTIFICATION A		Experimer	ntal Co



Please visit the Great Lakes Fishery Commission website for additional resources: Research theme papers: <u>http://www.glfc.org/research/SRra.php</u>; Sea Lamprey Control Board's research priorities: <u>http://www.glfc.org/research/SLCB\_research\_priorities.pdf</u>; GLFC Strategic Vision: <u>http://www.glfc.int/pubs/SpecialPubs/StrategicVision2012.pdf</u>.

nemosensory mmunications	Experimental Control Methods	Non-Theme
Role of larval omones in spawner cream selection	Novel control strategies for each sea lamprey life stage	
lanipulating sea rey behavior using pheromones	Electrical guidance to improve trapping for control	
tory inhibition from contaminants	Next-generation lampricides	
ctory perception of emosensory cues	Push-pull strategies	The Sea Lamprey Research Program also funds relevant research that does not directly fit under one of the other themes
A interference of nosensory function	Genetic-based control methods (e.g., RNA interference)	
omote biological nderstanding of chemosensory mmunication to evelop novel sea amprey control strategies	Integrate chemosensory communication with novel control strategies (i.e., pheromone baited traps)	
ontrol Methods	Highlight current control methods for sea lamprey and identify experimental control strategies	