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Aug 7, 2024

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7575 Metropolitan Drive #103,
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Subject: Threats to breeding seabirds and sensitive habitats of West Ski Island in Mission Bay and the lack of appropriate protective measures with the opaque permitting process of the City of San Diego allowing events with potentially significant impacts during the breeding season of the California Least Tern and other Larid species

Dear Ms. Leslie:

This letter is an updated version of an earlier letter, reflecting broader support for the needed changes from new organizations. The San Diego Audubon Society (SDAS) is a 3,000+ member non-profit organization with a mission to foster the protection and appreciation of birds, other wildlife, and their habitats, through education and study, and to advocate for a cleaner, healthier environment. We have been involved in conserving, restoring, managing, and advocating for wildlife and their habitat in the San Diego region since 1948.

SDAS would like to bring to the attention of the City of San Diego (City) the following:

1. Federally and State Endangered California Least Tern (CLTE) *Sternula antillarum browni* and 16,000+ breeding larids that colonized West Ski Island in 2020 that use the ecologically sensitive habitats of Mission Bay for breeding
2. The lack of appropriate management of the breeding colonies provides inadequate protection from disturbance impacts of recreational activities and threatens the productivity of sensitive seabirds and habitats in Mission Bay during the breeding season.
3. The opaque permitting process for cumulative disturbances occurring during nesting season including fireworks during July 4th celebrations launched by SeaWorld Inc., sporting tournaments, and the San Diego Bayfair proposed by Thunderboats Unlimited Inc. for September 13th to 15th 2024

SDAS also provides recommendations on how the City can further protect these habitats and species and make improvements to its permitting process that consider principles of recreational ecology while approving recreational events in Mission Bay.



1. Dynamic Nature of Mission Bay

Mission Bay is host to a dynamic, ever-changing, biologically sensitive ecosystem that should be managed appropriately. In addition to the four protected nesting sites for CLTEs (Mariner's Cove, FAA Island, Stony Point, and North Fiesta Island), West Ski Island is now an established seabird breeding colony for larids since 2020. Caspian Tern *Hydroprogne caspia*, Royal Tern *Thalasseus maximus*, Elegant Tern *Thalasseus elegans*, Western Gull *Larus occidentalis*, Forster's Tern *Sterna forsteri*, and Black Skimmer *Rynchops niger* have nested in West Ski Island in Mission Bay since 2020. We are fortunate that almost all the unique assemblage of tern species found in San Diego have selected Mission Bay as an appropriate location to nest, as this incredible spectacle of many thousands of terns has become a local marvel with many San Diegans reporting overall enjoyment and intrigue of this spectacle to SDAS in the past couple of months.

The breeding population of Elegant Tern and subsequently the large number of nests have exponentially increased from last year in 2023 and on May 24th, 2024, **7676 nests were documented along with 463 Royal Tern nests, 25 Forster's Tern nests, and 14 Caspian Tern** nests on West Ski Island, recorded by Robert Patton and Jennifer Jackson. Black Skimmer congregates in several areas across San Diego County, with the main areas including the San Diego Saltworks in San Diego Bay, San Diego River, Mission Bay, and Batiquitos Lagoon. Originally, Mission Bay has been a wintering site for the species and the establishment of the colony has been exciting as the recommendation of management guidance to further conservation of this species is to "establish additional colony sites at coastal sites and enhance the isolation of sites from terrestrial predators"¹⁴, which has been naturally achieved at West Ski Island in 2020. Among CLTE breeding sites, FAA Island became the most productive site in 2023 even when CLTE faced disturbance pressures in Mariner's Point. All of this demonstrates the dynamic nature of Mission Bay and why permitting special events in this region should consider the current activity of the season in addition to historical data.

2. Threats to the species and habitat and inadequate protections

As future resources that coastal seabirds rely upon are uncertain with climate change and ocean variability and Mission Bay is central to a heavily urbanized area with multiple anthropogenic impacts, it is crucial that the City of San Diego prioritize protecting the declining population of CLTE by adhering to the breeding season of April 15th to September 15th. The City also needs to manage each new resident breeding seabird species on West Ski Island appropriately by considering the breeding phenology of Caspian Tern, Royal Tern, Elegant Tern, Forster's Tern, Black Skimmer, and Western Gull, with a reminder that Black Skimmer breeding may extend into mid-October. Management should also factor in additional disturbance to other bird species

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of concern including both California State Fully Protected Species the State and Federally Endangered Ridgway's Rail *Rallus obsoletus levipes* and State Endangered Belding's Savannah Sparrow *Passerculus sandwichensis beldingi*, and habitats around Mission Bay that are sensitive to degradation and destruction.

Under these circumstances, we believe permitting special events like Outrigger Iron Champs (June 22, 2024), Over The Line Tournament (scheduled for July 13,14, 20, 21st, 2024), the July 4th Fireworks, and the San Diego Bayfair 2024 (Sep 13th to 15th) that create noise, lighting, air, water, chemical pollution, and human disturbances

- a) without a transparent permitting process with sufficient time for public comments, and
- b) during the breeding season of CLTEs and other species without any analysis on impacts

is unacceptable and violates the MSCP SAP which requires the City at a minimum, to ensure the "protection of nesting sites from human disturbance during the reproductive season." It is also a violation of the State California Fish and Game Code (FGC) § 3503 and the Migratory Bird Treaty Act due to the disturbance to breeding birds that are tending nests. Specifically, we would like to call to your attention the impacts of San Diego Bayfair and the July 4th fireworks below.

Impacts of Recreational Boating on Breeding Birds, Erosion, and Eelgrass

Recreational boating raises numerous serious concerns from noise, air and water pollution to the impact on wildlife - both plants and animals through turbidity, flushing of nests, disturbance of sensitive aquatic plants like eelgrass, and general habitat degradation and erosion. As far back as 1994 a study by the National Biological Survey found 111 annotations on a wide array of boating disturbances on wildlife¹ with disturbances from recreational boating on waterbirds well documented. The San Diego Bayfair is planned for September 13th to 15th during the breeding season of California Least Tern (CLTE) and will coincide with Black Skimmer breeding season that extends into mid October. We are concerned that the disturbance from recreation events may have negative consequences for breeding birds if there is an overlap with critical stages of development³. Some of our concerns include:

- Motorized boats at high speeds cause birds to flush sooner across all studies² which is energy expensive, can cause nest abandonment, and can result in mortality of unattended eggs and chicks.
- Bird strikes by high-speed watercraft due to the proximity of the event to West Ski Island and FAA Island.



- The hydroplane boats appear to be using Jet-A (Kerosene) fuel³ and the exhaust and discharges from these boats could pollute the waters used by these species to forage and may negatively impact the visibility required for foraging.
- The long and tall wakes and the very high noise levels from the hydroplanes and the drag boats are likely to seem threatening to the birds and may cause adults to abandon chicks and eggs in the nesting areas
- All bird inhabitants and existing nests on West Ski Island will be vulnerable to inundation from the wakes from the high-speed boats and the nests at lower elevations near the waterline could get washed away and chicks will be unable to escape the island by flight or may have inadequate flight skills to avoid the high-speed boats
- Larger tern species exhibit creching behavior where chicks gather together in groups, a large number of chicks trying to avoid the water could potentially destroy existing nests on the island at higher elevations when attempting to reach higher ground on West Ski Island to avoid drowning from inundation
- Extreme disturbances may cause confusion and may also cause the young to enter the water and potentially collide with the boats.
- Boat-induced wake turbulence can stir up sediment and other organic particles in the water which can remain suspended in eelgrass beds for a long time thereby reducing their photosynthesis capacity due to light attenuation, causing further erosion, and adding to other physical disturbances like cutting and scarring of eelgrass caused by anchors, propellers, chains, and lines
- A comprehensive study by the Chesapeake Bay Commission in 2017 concluded that there was an “unequivocal connection between boat wake energy, shoreline erosion, sediment suspension, and nearshore turbidity.”⁴

San Diego Bayfair is billed as hydroplane racing with the “fastest powerboats in the world.” Some boats are powered by 2000 horse-power engines, fueled by jet fuel, and reach straightaway speeds of 200 mph. This is recreational boating on steroids and the impacts on birds and the habitat from such a racing event over 3 days cannot be ignored.

Impact of Fireworks on Birds

Fireworks launched from Fiesta Island on a nightly basis by Seaworld Inc include [daily shows typically 6 minutes in duration](#) planned through August 11th and on [July 3rd and July 4th](#), a [show for the length of 20 minutes](#). The impacts of fireworks on birds and breeding birds are well documented and after observing impacts firsthand, we continue to be concerned about the following issues and acknowledge there may be additional issues not on this list:



- Studies show fireworks-related disturbance decreased with distance, disturbance is strongest in the first five kilometers⁵ and the proximity of fireworks to all the colonies is concerning as the launch site at Fiesta Island is less than a few kilometers away.
- The fireworks have a greater impact on the larger larid species nesting on West Ski Island compared to the smaller birds as a study showed that communities of large-bodied species displayed a stronger response than communities of small-bodied species⁵.
- Impacts on productivity and interference with the development of eggs and chicks due to noise disturbances.
- Excess energy expenditure of breeding birds during this critical period requires a high level of energy for foraging, chick provisioning, and requirement of supplemental calories to make up for lost energy.
- The perception of fireworks in seabirds may be unpleasant or potentially painful, where habituation to fireworks does not occur⁶.

Last week, San Diego Audubon monitored the seabird colony before, during, and after the fireworks on July 3rd and July 4th to observe the impact of the longer fireworks shows on the seabirds. In summary, in response to both shows, the birds exhibited disturbance during the show with adult birds documented flying around the colony, panic flights of huge flocks of terns of 5,000 - 7,000 flying around during and after the show notably on July 4th with the birds continuing to fly around in huge flocks after we departed the area. This behavior was consistent with research where birds responded to fireworks by fleeing the area at high elevations and demonstrated long periods of abandonment to an area⁷, though birds continued flying around in large flocks an hour after the fireworks show ended. Large flocks of terns were in flight for over an hour, forcing breeding birds to expend valuable extra energy that should be reserved for foraging to provision young during this critical growth phase in chicks. If adults were incubating eggs, the length of disturbance could have caused egg mortality due to the absence and chicks may have been vulnerable to predation. Further, as the chicks of larger tern species including Caspian Tern, Royal Tern, and Elegant Tern exhibit “crèching behavior,” it is feasible the larger chicks may have trampled nests with eggs and smaller chicks in response to the disturbance of the fireworks, which may explain how adult and chick tern carcasses and eggs ended on the shore in the Kendall Frost Marsh on July 6th, which was consistent with the tidal cycle. Shorebirds including Marbled Godwit *Limosa fedoa* and Willet *Tringa semipalmata* were also affected and larger waterfowl including Canada Geese *Branta canadensis* vocalized and flushed flying in flocks during the fireworks.

Besides the impact on birds, fireworks leave chemicals like perchlorate in water that are harmful to humans and aquatic life, particulate matter that is harmful to human health through air



pollution and trash including microplastic that gets into nearby waterways.

3. Grievances with the Permitting Process

As shown above, both recreational boating and fireworks in and around Mission Bay have a significant negative impact on the breeding birds and habitat of the region. Given the level of impact it is imperative that the permitting process for such events allows opportunities for raising environmental concerns, considers mitigation, and alternatives before permitting such events to proceed.

The San Diego Bayfair 2024 did not have a public review process, nor was it reviewed by the Mission Bay Park Committee, due to a ‘grandfathering’ process the City uses. This process is not appropriately applied here for three reasons.

- The event did not occur last year as the organizers withdrew their application, and therefore should have to reapply for an event permit. It was canceled during the pandemic, as many events were, but it also was canceled last year for unrelated reasons²⁴, and has not occurred in two of the last four years.
- An even more important reason for not grandfathering the event is due to the dynamic nature of the natural resources of this area of the bay that have substantially changed since the permit was first issued. Events should be removed from the grandfathering process when either the events change substantially or when their potential environmental impacts change substantially — in this case the latter condition is clearly met by the increased importance of West Ski Island to breeding larids since 2020.
- The permit application includes a section for disclosing any objections from interested parties. When an application is grandfathered there is no opportunity for an interested party to object.

Similarly, the City of San Diego Local Coastal Amendment #2-01 to the Sea World Master Plan states, “SeaWorld recognizes the endangered status of the California Least Tern, and the proven ability of the Mission Bay park environment to aid the recovery of this species. To assist in that endeavor, SeaWorld will protect the designated least tern nesting sites on Mariner’s Point and Stony Point from adverse disturbance during fireworks displays. SeaWorld will move the fireworks staging barge to a location approximately one-half (1/2) mile eastward of the Stony Point Preserve during the least tern breeding season, which runs from April 1st to September 15th of each year.” It was also stated “Due to rising concerns over the possible environmental effects of fireworks displays, both from public recreation and water quality standpoints, SeaWorld will implement/continue an expanded monitoring program during the next five years. Monitoring results will be submitted to the Coastal Commission, Regional Water Quality

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Control Board, National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Game, on an annual basis. However, at the end of the first year, SeaWorld will present its findings to the Coastal Commission and the above agencies for review and possible revisions to the expanded monitoring program. At the end of five years, the potential adverse impacts of fireworks on both environmental resources and public recreation will be re-evaluated by the identified agencies.” However, the permit needs to be revisited for the following reasons:

- Seaworld is in violation of their LCP anytime they set off fireworks during CLTE breeding season from Fiesta Island, as they did on July 4th, as any fireworks set off April 1st to September 15th should be at least a half mile away from Stony Point.
- Ground conditions have changed in 20+ years since the Master Plan Agreement was drawn - we now have more sites supporting seabirds, more nesting birds in Mission Bay and more species in these sites as shown by SDAS above
- More scientific research available on negative impact on fireworks and birds as referenced in the letter
- More evidence from other places around the world on the negative impact of fireworks on birds
- Evidence of firework impacts on seabirds collected by SDAS from this year's fireworks.

Therefore, it is time to re-assess the impact of fireworks considering the changes to the habitat and species of Mission Bay in the 22 years since the Sea World Master Plan update was originally published. This year, due to a lack of transparency with the permitting process the Mission Bay Park Rangers were unaware of the location of fireworks being directly adjacent to the CLTE Stony Point nesting site.

Events proposed in Mission Bay Regional Park should be presented to the Mission Bay Park Committee for review if they could impact the species and value of the Bay, even as it changes and improves in the coming decades—the use of West Ski Island is a testament to the investments the City has made in protecting and conserving the bay and it’s water quality, and the permitted recreation events should reflect that increasing value. Beyond the threats to the bird species, the impact on eelgrass and other aquatic plants, the impact on turbidity, water and air pollution from the use of jet fuel by powerboats and the accompanying exhaust and from fireworks all have to be reviewed before permitting such events in a sensitive, ecologically-important location.



4. Recommendations

SDAS has the following recommendations on how the City can further protect these habitats and species and make improvements to its permitting process that take into account principles of recreational ecology while approving recreational events in Mission Bay:

- Given the ecological value of Mission Bay and the number of species that depend on the habitat, we believe that the City’s permitting process for special events that can cause noise, lighting, pollution, or human disturbance to these species needs to be revamped. Events must not be grandfathered and need to go through a proper permitting process to determine their environmental impact, even if an event was approved in the past as ground realities change from season to season.
- Major events like San Diego Bayfair with 75 vessels and 50 crafts ranging from hydroplanes, drag boats, water bikes, jet skis to 100 spectator craft over three days on Mission Bay in a boat racing competition with the world’s fastest powerboats need an environmental impact analysis to be completed prior to permitting.
- Given that Mission Bay hosts several seabird colonies less than 2 km where fireworks are detonated and we observed negative impacts on July 3-5th, including mortality of adults, chicks, and eggs, that is clear evidence that fireworks harm the birds. Fireworks in Mission Bay during seabird nesting should cease completely.
- A 2011 review of human disturbance impacts on waterbirds recommends that “Strategies, such as establishing set-back distances of 250 m from waterfowl, diving ducks, wading birds, and shorebirds may lessen the impacts to the most sensitive species.”⁴ While we encourage the City to protect this colony as much as possible, there is a 500 ft buffer from California Least Tern colonies established at Mariner's Point⁸ and at a minimum, the City should establish a 500 ft buffer around West Ski Island while seabirds are nesting on this island.

Sincerely,

Padma Jagannathan
Conservation Committee
San Diego Audubon Society

Lesley Handa
Lead Ornithologist
San Diego Audubon Society

James Peugh
Conservation Chair
San Diego Audubon Society

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A handwritten signature in black ink, appearing to read "Savannah Stallings".

Savannah Stallings
Advocacy Coordinator
San Diego Audubon Society



Kathy Parrish
Board Vice-President
Fiesta Island Dog Owners



Phillip Musegaas
Executive Director
San Diego Coastkeeper



Vi Thuy Nguyen MD, FAAP
Co-Founder
San Diego Pediatricians for Clean Air



Pamela Heatherington
Environmental Center of San Diego



Mitch Silverstein
Policy Manager
Surfrider Foundation San Diego County

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3. <https://thunderboats.ning.com/page/hydroplanes-101>
4. <https://lmcd.org/wp-content/uploads/2022/06/Chesapeake-Bay-STAC-Boat-Wake-study.pdf>
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8. <https://www.sandiego.gov/park-and-recreation/parks/regional/missionbay/marinerspoint>

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Attachments



Attachment A: Screenshot of a video showing the disturbance of terns on West Ski Island during the fireworks show on July 4th. (See the video in additional resources)



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Attachment B: Panic flights of 5,000 – 7,000 terns in response to the fireworks on July 4th in Mission Bay. (See the video in additional resources)



Attachment

C: Adult Tern Carcass found on July 6, 2024, in the Kendall Frost Marsh found by Karina Ornelas.

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Attachment D: One of the tern chick carcasses found on July 6, 2024 in the Kendall Frost Marsh found by Karina Ornelas.

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Attachment E: One of the tern eggs found on July 6, 2024 in the Kendall Frost Marsh by Karina Ornelas.

Additional Resources:

The locations of tern carcasses and eggs found on July 6th:

<https://hol.maps.arcgis.com/apps/webappviewer/index.html?id=c509a8cbd3e34252bafde9821b03d491>

Videos of West Ski Island and Panic Flights from July 3rd and 4th:

https://drive.google.com/drive/folders/1Od86eqIbgcftDeBLCCljwAuYeI8PyZwW?usp=drive_link