Digital Aerial Baseline Survey of Marine Wildlife in Support of Offshore Wind Energy

Summer 2018 Target Extraction Summary Report

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Introduction

Target extraction for the Summer 2018 survey for the NYSERDA Offshore Planning Area (OPA) was started in October 2018. All target extraction and quality control of target extraction was completed in March 2019.

Overview

A total of 320,453 images were collected over the OPA providing an analyzed survey area of 3,150.38 km^2 (Table 1). The vast majority of the images collected contained no evidence of living organisms, with more than 98% of the images from the OPA being blank (Table 2). Of the 320,453 images analyzed, 315,371 were considered blank. Initially 31,601 (10%) of the blank images were sent for QC, and 375 were determined to contain targets (living organisms) that had been missed in the initial target extraction. Although the overall quality rate of the initial extraction was 98% and well within the quality control criteria established for the project, the overall rate was lower than in previous survey results. A closer look at the extraction process identified one run and one analyst with a lower agreement. The run was reanalyzed excluding those images already reviewed during the QC process. Of 1,569 images re-reviewed, 1,484 were found to be blank (94.6%) and of those 149 (10%) were sent for QC providing a total of 31,750 blank images reviewed during the QC process (Table 2). From the remaining 85 images, 316 targets were found. Additional images from the analyst were reviewed and a further 203 targets were found and added to the dataset. The final target extraction QC rate reached 98.82% (Table 3). Additionally, we added the targets from the 375 images deemed not blank during the QC analyses (Table 4) providing an additional 1,106 targets. The total number of targets added was 1,625 individual targets and 252 fish shoals. A total of 14,318 targets were sent to taxonomists for identification (Table 5). Fish shoals were loaded to ReMOTe for measurement.

All organisms found during target extraction and QC were transmitted to taxonomists for identification.

Table 1. Total Images and Area Surveyed

Area	Total Number of Images Collected	km^2 of Analyzed Images within the Survey Area	Percent Coverage	Survey Area (km^2)
OPA	320,453	3,150.38	7.2	43,745.20

Table 2. Blank Images Detected

Area	Total Images Analyzed	Blank Images			
		Number Detected	Total Percent Blank	Number Sent for QA	Total Percent QA
OPA	320,453	315,371	98.41	31,750	10.07

Table 3. Target Extraction Quality Control Results

Number of Images for QC	Number of Images QCd as Blank	Number of Images QCd Not Blank	% Agreement Reached
31,750	31,375	375	98.82

Quality Control Results

Table 4. Number of images containing each represented taxonomic group

Group Found in Image during Extraction QC	Number of Images*
Avian	86
Marine Mammals	34
Turtles	64
Sharks	31
Rays	75
Large Bony Fish	35
Fish Shoals	49
Vessels	5
Fixed Structures	1
Total	**380**

*Some images contained multiple taxonomic groups, and some contained multiple individuals of the taxonomic group

Table 5. Targets Detected and Sent for Identification

Group	# Individuals
Avian	4,871
Marine Mammals	2,165
Turtles	547
Sharks	413
Rays	5,797
Large Bony Fish	488
Vessels	34
Fixed Structures	3
Total	**14,318**