

Black Oystercatcher Monitoring Project Training Materials



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About the Black Oystercatcher Project

The California Central Coast Black Oystercatcher Project is a regional collaborative initiative. Its partners include the Monterey Audubon Society, California Coastal National Monument, Point Lobos, Pacific Grove Museum of Natural History, and other community science volunteers. It is part of a larger California coastwide Black Oystercatcher monitoring project.

BLOY has been around for about 10 years, established by the California Coastal National Monument. BLOY studies the health of our rocky shoreline habitat. BLOY accomplishes this by monitoring the reproductive success (and impacts that affect reproductive success) of an indicator species, the Black Oystercatcher.



The Regional Coordinator for the California Coastal National Monument is Rick Hanks at rickhankscnm@yahoo.com, (831) 488-3150.

Training process

To be part of the Black Oystercatcher Monitoring Program's community science program, you must register as a Monterey Audubon volunteer at MontereyAudubon.org/volunteer.

At the beginning of March, the Regional Coordinator sets up a lecture and a field training for BLOY monitors. The lecture will be recorded and made available for all new volunteers. The Regional Coordinator sets up the monitoring sites for all volunteers.

If a new volunteer is unable to make the lecture and field training, then the volunteer must read this training guide and shadow an experienced volunteer for at least one (preferably two) monitoring sessions. Once the new volunteer feels comfortable monitoring on their own, they can spend days at that site (unless the Regional Coordinator assigns the new volunteer to a different site).

Linked below is the latest (2025) Black Oystercatcher Monitoring virtual training:

https://youtu.be/wS8vtSRwn_4

Why Black Oystercatchers?

It can be difficult to study how much humans are impacting the world. Development, climate change, trash, and overfishing have severe effects on oceanic and shoreline animals: but how do we get verifiable data?

Indicator species serve as measurements for the health of the entire ecosystem. Indicator species are often the most sensitive and the first to be impacted when an environment changes. This a huge indication of environmental change due to disease outbreak, pollution, invasive species, or other human-caused impacts.

Black Oystercatchers are excellent indicator species of the rocky shoreline habitat. One thing that makes them a valuable indicator species is that they do not go across any other habitats. They only nest on rocky shores: they are not found inland, on sandy beaches, or in any other habitat. For another, they are large and visible. It is much easier to see and track an oystercatcher than, say, an anemone. Lastly, oystercatchers are territorial: they pick a territory and tend to stay there for life. This means we can get years worth of data out of a single pair.

Black Oystercatchers nest on beaches and are very vulnerable to human encroachment, oil spills, and severe ocean conditions.

What does a BLOY volunteer do?

BLack **OY**stercatcher monitors contribute to scientific research to better understand and protect Black Oystercatchers and their rocky intertidal habitat.

- Monitor sites around the Monterey Peninsula, focusing on mated pairs and their nest.
- Record behaviors like foraging for food, nesting, or alarm calls.
- Take note of disturbances, whether natural or human-caused.



The statewide California Black Oystercatcher Project is a large-scale, standardized, citizen-science based effort directed toward the following goals:

1. Gather demographic data on this little studied top predator of the California intertidal ecosystem, necessary to establish a solid demographic number from which to measure population stability or decline;
2. Monitor reproductive success for at least ten years in order to obtain a sample robust enough to document any trends in reproductive success of this species of conservation concern and compare these data with data on other rocky intertidal marine species within the same areas in order to assess the long-term health of the rocky ecosystems affected by such factors as sea-level rise, ocean acidification, climate change, and rapidly expanding human populations;
3. Assess continued management and outreach actions that directly protect and improve nesting sites and habitat;
4. Determine what causes loss of eggs and chicks in some areas and high success rates in other areas;
5. Develop partnerships to share key information among agencies and scientists seeking to address questions about climate change impacts to coastal assemblages; and
6. Identify conservation activities that can be implemented to reduce disturbance to breeding birds, including both physical measures and outreach efforts, and assist with preservation of the species.

Tools you'll need

A BLOY monitor needs:

- Binoculars
- Online data sheet, sent out at the beginning of each season. MP (Monterey Peninsula), PB (Pebble Beach), and PL (Point Lobos) each have their own online forms.
- Good outdoor shoes, clothing appropriate for the weather, and sun protection

These optional tools can be checked out at the PG Museum:

- Spotting scope
- Wildlife disturbance cards
- Black Oystercatcher interpretive cards
- Binoculars (if you need)

Natural history

Black Oystercatcher basics

- Scientific name: *Haematopus bachmani*
- Range: rocky intertidal zones from Alaska to Baja California
- Lifespan: average 15 years, more than 30 years in captivity
- Diet: shelled invertebrates like mussels, barnacles, limpets, and chitons
- Eggs: 1-3 laid per nesting season
- Incubation period: 28-30 days



Fun facts

- The orange bill of the black oystercatcher grows continuously. This is a useful adaptation for a creature that has to hammer shelled items off rocks.
- The genus name *Haematopus* is Greek for “blood eye,” in reference to its distinct eyes.
- Black oystercatchers do not eat oysters! (The American Oystercatcher does.)
- A group of oystercatchers is called a stew.

Oystercatchers are found all across North America. Outside of California, you'll see the American Oystercatcher, which has white markings on its wings and stomach. The Black Oystercatcher is just found along the Pacific Coast, from Alaska to Baja California. It has an all-black body, along with the distinctive long orange bill, pale legs, and yellow eyes.

Black Oystercatchers are some of the world's most charismatic shorebirds. They are very vocal, and you will hear their trumpet-like calls before you see them. Oystercatchers form monogamous pairs, and the pairs stay in constant communication. They will vocalize while feeding, vocalize when something comes into their territory, vocalize when about to take flight, or vocalize to just say "Where are you?" As you monitor the oystercatchers, you will grow to distinguish all the different vocalizations, and you'll see how full of personality Black Oystercatchers are.

One of the most useful things about Black Oystercatchers is that they establish territories. They fiercely defend their territories, so that a single pair will stay in the same location for years. This means we get long-term data on how the environment and human activity affects the oystercatchers (and, as an indication, the entire ecosystem).

Monitoring

When measuring the health of the Black Oystercatcher, our monitors look for:

- Reproductive success: how many eggs are laid, how many eggs hatch, and how many chicks make it to adulthood.
- Disturbances: human encroachment into territories, dogs, predation, or other things that put the oystercatchers and their nest at risk.
- Day-to-day behaviors: foraging, resting, defending territories from other oystercatchers.

Adult behavior types

Here are the adult behaviors to look out for. Each has its own code that you enter into the data sheet.

- Nest building: Black Oystercatchers nest on rocky outcrops, using small pebbles as their nests. If you see oystercatchers tossing rocks, they are looking for a good spot for their nest.
- Incubating: sitting on the nest to keep the eggs or chicks warm.
- Copulation: mating. This is a quick business and only lasts for a few seconds.
- Territorial behavior: defending territory from other oystercatchers. Oystercatchers will be very vocal until the intruder is gone.



- Foraging: looking for food. They will walk along the rocks, prodding limpets, mussels, and other hard shore animals with their beaks.
- Disturbed: any sort of alarm call or, even worse, being chased out of their territory. We'll go into different types of disturbances later – this (D) category is for any human, predator, dog, etc.
- Incubation exchange: oystercatcher mates take turns sitting on the egg. If you see one take the place of another (so the mate can forage for food), this is an incubation exchange.
- Provisioning young: feeding chicks or teaching the chicks how to hunt and forage for food. (V) is for behaviors both at the nest and away from the nest.
- Resting or preening: sleeping, cleaning feathers.

Egg status

Our goal is to record how many eggs that were laid were able to hatch. The eggs are speckled and can range in color from brown to green-ish. Either way, they'll blend in to their background. As soon as you see nesting behavior, you'll want to check out a spotting scope from the PGMNH.



Record both the number of eggs seen and the status:

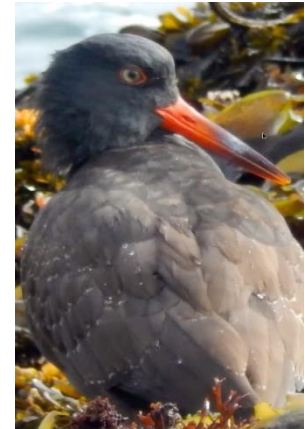
- Present: are there any eggs?
- Suspected: you don't see eggs, but you think that is due to bad visibility, not lack of eggs.

Record the information above AND the information below:

- Whole: does the egg appear undamaged?
- Broken: the egg is damaged.
- Hatched: the egg has hatched! (And hopefully cute chicks are forthcoming.)
- Pipping: the external egg shell is broken where the chick is beginning to break out
- Marked: a researcher has placed a marker or some other identification on one of the eggs (not common in the Monterey area)
- Removed but not collected: the egg was taken, but not by an approved researcher.
- Collected: usually there will be a collection ID you can take note of.

Chick status

Our goal is to see how many chicks fledge: that is, they gain their adult feathers and are adult-sized. Notice the picture of the fledgling above: its feathers aren't as black as an adult, its bill has some grey on it, and the bill is not as long as an adult's.



Record both the number of chicks seen and the status:

- Present: are there any chicks?
- Suspected: you don't see chicks, but you think that is due to bad visibility, not lack of chicks.

Record the information above AND the information below:

- Newly hatched: brand new tiny chicks, so new they are still slimy!
- Small downy: small and fluffy – downy feathers are extra-fluffy to retain warmth. Downy feathers are not fully waterproof and can't help the bird fly. Down will be replaced by adult feathers when the youngster fledges.
- Medium: about half the size of the adult.
- Nearly fledged: adult sized, but flight feathers are too short to enable flight.
- Fledged: the youngster has full adult feathers and can fly, no downy feathers left. Other than the length of its bill and some plumage differences, it is nearly indistinguishable from the adult.
- Foraging: looking for food, pecking at limpets, mussels, etc.
- Unknown age: cannot tell what size the youngster is, due to bad visibility.
- Carcass: please include the size or approximate age of the deceased chick. Pictures are useful. Contact regional coordinator if chick has perished.

Impacts to Black Oystercatchers

It is especially important to record both the type of disturbances Black Oystercatchers face as well as the number of disturbances. These disturbances are directly responsible for the health (or lack thereof) of oystercatchers and the ecosystem they are indicator species of.

Types:

- None (0)
- BLOY interloper (1)
- Waves (2)



- Native land mammal (3)
- Non-native land mammal (4)
- Aquatic mammal (5)
- Gull (6)
- Raptor (7)
- Corvid (8)
- Other avian (9)
- Human, researcher (10)
- Human, non-researcher (11)
- Boating (12)
- Diving (13)
- Fishing (14)
- Pet (15)
- Drone (16)
- Other aircraft (17)
- Other

For each of the above impact types, specify. What species of raptor? What type of pet (almost invariably dog)? What species of gull or corvid? Did a pet dog chase the oystercatchers from their territory, at which point an American Crow came to prey upon the eggs? Be specific.

Almost all people are completely unaware they are hurting the environment when they climb on rocks. They just think they're having a good time with their pet. And because they aren't afraid of their dog, no animal could possibly find them threatening. That's why we have the disturbance interpretation cards to help educate the public.

However, the most important thing is: do not engage in any conversation that makes you uncomfortable! You are a volunteer, and there is nothing more important than your well-being. There is no staff member and you are by yourself. Do not engage in hostile conversations or any other interaction that negatively impacts you. Your #1 role is to take data. The data will lead to protection for the BLOYS.

Black oystercatcher response to impacts

How the Black Oystercatchers are affected by the disturbance can be heart-breaking. But this is the most important data of them all.

Types of responses:

- None (0)
- Adult alerted (1)
- Adult flushed (2)
- Young alerted (3)
- Young flushed (4)
- Adult mortality (5)
- Young mortality (6)
- Eggs depredated (7)
- Nest destroyed (8)
- Other (9)

What that means:

- Alerted: Black Oystercatchers are very vocal and are excellent mates. They communicate at once if there is a disturbance. Listen for a loud, repeating call that lasts as long as the threat is present. If the second oystercatcher joins in, they may be trying to intimidate the disturbance into leaving.
- Flushed: driven away from their resting or nesting place. The oystercatcher has to either run or fly away to get away from the disturbance. This is very bad, because the oystercatcher is expending energy that the environment may not be able to provide. They will have to rest, though the tides may not allow it. They will have to forage more, though there may not be enough food. Wild animals live at a constant state of exhaustion, and the energy they spend getting away from disturbances is energy they can't spend caring for their chicks.
- Mortality: predation or other lethal event.
- Egg depredation: predation upon eggs. This could happen if humans, dogs, or drones flush adults from the nest.
- Nest destroyed: did the disturbance completely wipe out the nest? (Even if there are no eggs yet?)

Survey quality

Take note of the quality of the environment, including temperature, visibility, and other relevant factors.

- Poor (P)
- Good (G)
- Excellent (E)

Results from previous data

Our data paints a daunting picture. Black Oystercatcher reproductive success has diminished rapidly just within the past four years. Black Oystercatchers are well below their ability to persist long-term in this region.

<p>Monterey Bay Region</p> <p>2021</p> <p>73 monitored territories</p> <p>65 territorial pairs</p> <p>47 breeding pairs</p> <p>50 nesting attempts</p> <p>7 fledglings</p>	<p>Monterey Bay Region</p> <p>2020</p> <p>72 monitored territories</p> <p>68 territorial pairs</p> <p>48 nesting pairs</p> <p>67 nesting attempts</p> <p>15 fledglings</p>
<p>Monterey Bay Region</p> <p>2019</p> <p>71 monitored territories</p> <p>65 territorial pairs</p> <p>52 nesting pairs</p> <p>55 nesting attempts</p> <p>20 fledglings</p>	<p>Monterey Bay Region</p> <p>2018</p> <p>71 monitored territories</p> <p>70 territorial pairs</p> <p>52 nesting pairs</p> <p>67 nesting attempts</p> <p>26 fledglings</p>

Reproductive success is defined as the number of fledglings divided by the number of breeding pairs. In order to maintain a healthy population, the reproductive success needs be over 65%. Under 35% indicates a population at risk.

Our data is important in not just showing the reproductive success or failure of this important indicator species, but why it is happening: exactly what disturbances are the cause. When we know what has impacted Black Oystercatchers ability to survive as a species – and, as an indication, the entire ecosystem – we can put in measures to fix it.

**2025 BLOY Breeding Season Monitoring Status Summary Table
July 31, 2025**

	Pairs with Territory	Pairs Nesting	# of Eggs	# of Chicks	# of Lost Chicks	# of Fledglings
Monterey Peninsula (MP)	16	8	24*	15	9	1
Pebble Beach (PB)	14	9	21*	7	4	1
Point Lobos (PL)	13	6	14*	9	3	1
Santa Cruz County (SC)	18	12	32*	21	11	6
San Mateo County (SM)	12	11	23*	14*	2	3
TOTALS	73	46	114*	66	29	12

* Estimated number of eggs or chicks

The table above can be pretty hard to read. But essentially, here's the reproductive success of the various areas in the Monterey region:

- Monterey Peninsula: 8.3% hatching success, 0% survived to fledgling.
- Pebble Beach: 0% hatching success, 0% survived to fledgling.
- Point Lobos: 50% hatching success, 10% survived to fledgling.
- Monterey Bay South Coast: 10% hatching success, 8.3% survived to fledgling.
- Santa Cruz county: 41.2% hatching success, 28.6% survived to fledgling.
- San Mateo County: 66.7% hatching success, 66.7% survived to fledgling.
- Monterey Bay North Coast: 45% hatching success, 35.3% survived to fledgling.
- Monterey Bay South + North Coast: 30% hatching success, 24.1% survived to fledgling.

2021 Monterey region disturbances

- Humans (non-researcher): 31
 - The most common disturbance are people walking on rocks, disturbing the Black Oystercatchers in their territories.
- Humans (researcher): 12
- Drones: 17
- Dogs: 7
 - Dogs present in the intertidal zones (on or off-leash), causing birds to flush even when nesting.

Humans comprised the greatest number of disturbances, mostly from people recreationally walking along rocks that are within Black Oystercatcher territories. Rarely are the disturbances intentional. People would walk on the rocks to have a good time, to explore the seashore, to have an activity they and their dog could engage in together.

When talking with a dog owner (which you are never obligated to do), start with the knowledge that they are not intentionally hurting the environment. A statement like, “I can see that you love our oceans,” is a great way to keep the interaction friendly. “I know that you and your dog would never intentionally hurt anything. But the birds don’t know that. They just see a big predator. The worst is that when they’re avoiding you and your dog, a real predator like one of those gulls will come in and eat their eggs or even their chicks! So thank you for staying on the trail and keeping our shores safe for everyone.”

Other disturbances

Birds:

- Black Oystercatchers: 123
- Gulls: 20
- Raptors and corvids: 14
- Other avian species: 25

Other mammals:

- Lost eggs or chicks may be due to predation from racoons, coyotes or other terrestrial mammals.

As far as avian disturbances go, by far the greatest number come from other Black Oystercatchers. The pair will work together to chase the other Black Oystercatchers out of their territory.

One of the reasons drones are so problematic is that they are loud machines that approach from the air. Raptors are common predators to Black Oystercatchers, so Black Oystercatchers (as well as other species preyed on by raptors) see drones are large predators. Worse, these predators are unresponsive to alarm calls and will follow the Black Oystercatchers, making them feel as though nowhere is safe.

A permit is required to launch or land a drone within the City of Pacific Grove. Most people who fly drones are unaware of this fact. That is one of the reasons the wildlife disturbance cards are so useful – these are official cards, so the drone-flyer can see you’re not an annoying neighbor, but an official representative. Also, you can just give them the card and leave if you are busy monitoring your birds or do not wish to engage in a potentially hostile interaction.

Conservation measures

Luckily, the community has responded. During Black Oystercatcher nesting season, ropes are put up on California Coastal National Monument rocks directing people to stay off of rocks that have a nest. Those who still disturb the oystercatchers can receive a fine (if reported).

The breeding season is generally May – July (Monterey’s busiest tourist season), but has been known to last as long as October.

Unfortunately, there is still much action needed to help the Black Oystercatcher. Remember that the impacts upon the Black Oystercatchers are an indication of how humans affect the entire environment. Our beaches and rocky shorelines draw in millions of tourists each summer (not to mention frequented by residents) – it will take a great deal of both legislative action and education for people to understand why their actions matter, not just to the birds, but the world we live in.



Thank you for all that you do!

Additional resources

These videos are useful to see BLOY behaviors:

- General BLOY foraging and feeding chicks: https://youtu.be/N8C1In2_M0g
- BLOY nest hatching at Oregon Coast Aquarium: <https://youtu.be/U1zL4V6yYdM>
- PG Museum BLOY video: <https://youtu.be/o8pY1d8smF8>
- BLOY foraging in Bay area: <https://youtu.be/ngJK89xUDUE>

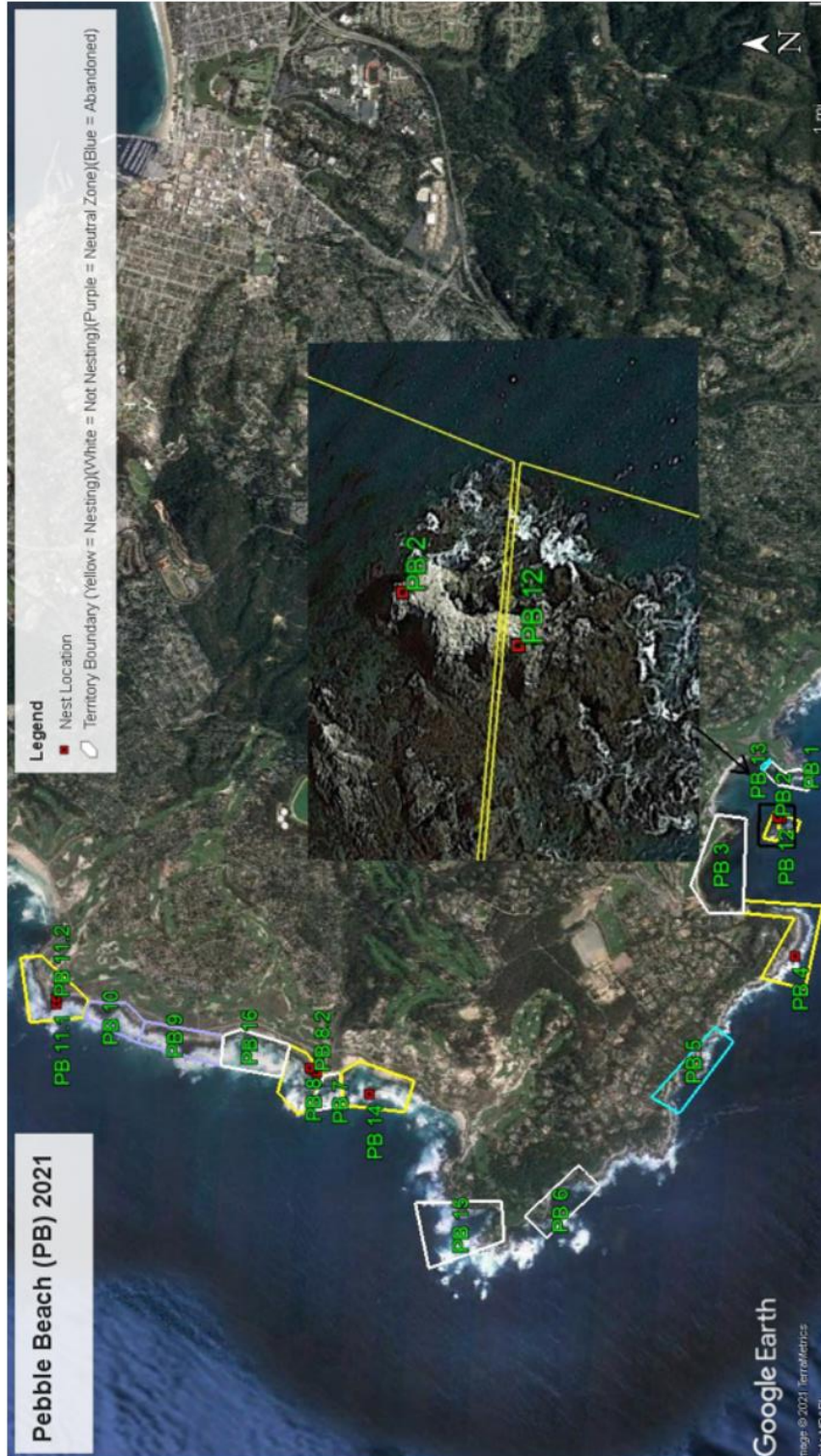
Appendix 1: Map of BLOY Monitoring Sites

Monterey Peninsula



Nest #	Name
MP1	Gazebo
MP2	Gull Rock West
MP3	Barnacle Rock
MP4	Point Pinos West
MP5	Point Pinos East
MP5.2	Point Pinos East
MP6	13th Street
MP7	Hopkins West
MP8	Hopkins East
MP9	Lower Point West (Oak Rock)
MP10	Hopkins North
MP11	Asilomar
MP12	Crespi Cove
MP13	Coast Guard Pier (El Torito)
MP13.2	Coast Guard Pier (El Torito)
MP14	3rd Street
MP15	John Denver Rock East
MP16	Point Pinos (Pyramid-Prom Rocks)
MP17	Perkins Park
MP18	Charthouse
ENZ	Neutral Zone

Pebble Beach



Nest#	Name
PB1	Stillwater Cove East
PB2	Stillwater Cove South
PB3	Stillwater Cove North
PB4	Ghost Tree (Stillwater Point)
PB5	Lone Cypress
PB6	Cypress Point Lookout
PB7	Bird Rock South
PB8	Bird Rock North
PB8.2	Bird Rock North
PB9	Ocean Road Neutral Zone (ORNZ)
PB10	China Rock South
PBP11	Point Joe
PB11.2	Point Joe
PB12	Stillwater Cove Pescadero Rock
PB13	Stillwater Cove Northeast *abandoned*
PB14	Bird Rock West
PB15	Cypress Point North
PB16	Bird Rock East

Appendix 2: Black Oystercatcher Data Sheet Codes

From Audubon California 2018 Hard Copy

CODES FOR DATA COLLECTION

Please use as many codes as are applicable and at least one entry per column.

Pair ID#	Use a unique ID for each pair. If possible, use same ID from year to year for discrete Pairs.
Nest Attempt #	Please use a separate data sheet for each sequential nest attempt by individual pairs. If a pair re-nests but moves to a different nest site, keep the Pair ID the same; Add information in notes re: new nest site location.
Weather	Please include in general survey notes for each visit (first page). Sky= % cloud cover; Wind speed (kts); Tide level; °C=Air temperature [May use Fahrenheit]; Sea state - Can also use Beaufort Scale [See following page]; General information to help interpret survey data. Use your best judgement!
Collections (all)	Abbr. COLL; Please indicate collection # in notes; include permit # on cover page. If collections occurred, note any researcher disturbance. No Collection
Survey Effort	Please use military time (24-hour clock 00:00) for start and end times; round total survey hours to 0.25 hours. Only for hard copy datasheet; On Google Sheet, use AM/PM
Nest Stage	B=Building/rock tossing; I=Incubation; Y=Young/chicks; E=Empty; U=Unknown [add notes]
Adults (total # and behavior)	B=Nest building/rock tossing; I=Incubating; C=Copulation; T=Territorial behavior; FO=foraging; D=Disturbed; IE=Incubation exchange; V=Provisioning young (adults feeding chicks in or away from nest); RP=Resting or preening
Eggs (total # and behavior)	P=Present; S=Suspected; AND: W=Whole; K=Broken; H=Hatched; PIP=pipping; M=Marked [add notes]; R=Removed but not collected; COLL=Collected [please add Collection ID]. No Collection Goal: How many eggs that were laid eventually hatch?
Chicks (total # and age class)	P=Present; S=Suspected; NH=Newly hatched; SD=Small downy; M= Medium, approx. 1/2 size of adult; NFL= Nearly fledged, adult size; FLY=fledged; FO=Foraging; U=Unknown age; CARC=carcass, include chick size/age. Goal: Did at least one chick fledge; if so, do we know exactly how many?
Impacts (Types)	0=None; 1=BLOY interloper; 2=Waves; 3=Native land mammal (specify); 4=Nonnative land mammal (specify); 5=Aquatic mammal; 6=Gull (specify); 7=Raptor (specify); 8=Corvid (specify); 9=Other avian (specify); 10=Human, researcher; 11=Human, non-researcher, 12=Boating; 13=Diving; 14=Fishing; 15=Pet (specify); 16=Drone; 17=Other aircraft; 18=Other (describe).
Impacts (Response)	0=None; 1=Adult alerted; 2=Adult flushed; 3=Young alerted; 4=Young flushed; 5=Adult mortality; 6=Young mortality; 7=Eggs depredated; 8=Nest destroyed; 9=Other (describe).
Survey Quality	P=Poor, low confidence that nest status accurately assessed; G=Good, adequate data collection but some uncertainty, i.e., that eggs/chicks were all seen; E=Excellent, low or no uncertainty regarding data collection.



Beaufort Wind Scale¹

Beaufort Number	Wind Speed (mph)	WMO Description	Ocean Appearance-beyond break zone	Effects on Land	Should I Survey?
0	under 1	Calm	like glass	none	yes
1	1-3	Light Air	light ripples	smoke drifts	yes
2	4-6	Light Breeze	very small waves (< 1.0 ft) with glassy appearance	can feel wind on face, leaves rustle	yes
3	7-10	Gentle Breeze	waves increasing in size and scattered whitecaps	leaves and twigs in constant motion	yes
4	11-16	Moderate Breeze	larger waves and numerous whitecaps	small branches move, dust blows	not ideal
5	17-21	Fresh Breeze	waves 6-8 ft, many whitecaps, and some spray	small trees begin to sway	occasional gusts OK, but otherwise no
6	22-27	Strong Breeze	whitecaps everywhere, more spray	large branches in motion, whistling may be heard	no
7	28-33	Near Gale	white foam from breaking waves is blown in streaks, sea heaps up	larger trees in motion, walking is difficult	no

¹ Some classes with high Beaufort Numbers are not included in this table.

If you use the Beaufort Wind Scale, you can simply select the appropriate Beaufort Number and add the prefix "BN" (e.g., BN4).

Black Oystercatcher Nest Monitoring

CODES FOR DATA COLLECTION. Please use as many codes as are applicable and at least one entry per column.

Pair ID#	Use a unique ID for each pair. If possible, use same ID from year to year for discrete Pairs.
Nest Attempt#	Please use a separate data sheet for each sequential nest attempt by individual pairs. If a pair re-nests but moves to a different nest site, keep the Pair ID the same; add information in notes re: new nest site location.
Weather	Please include in general survey notes for each visit (first page). Sky= %cloud cover, Windspeed (kts), Tide level, °C=Air temperature, Sea state; can also use Beaufort scale. General information to help interpret survey data. Use your best judgement!
Collections (all)	Abbr. COLL; please indicate collection # in notes; include permit # on cover page. If collections occurred, note any researcher disturbance.
Survey Effort	Please use military time (24 hour clock 00:00) for start and end times; round total survey hours to 0.25 hours.
Nest Stage	B=building/rock tossing, I=incubation; Y=young/chicks, E =empty, U = unknown [add notes]
Adults (total # and behavior)	B=nest building/rock tossing; I= incubating, C= copulation, T= territorial behavior; FO= foraging, D= disturbed, IE= incubation exchange; V=provisioning young (adults feeding chicks in or away from nest); RP=resting or preening
Eggs (total # seen & status)	P=present, S=suspected, A=VD, W=white, K=broken, H=hatched, P=pipping, M=marked with notes, K=removed but not present, S=suspected, N=newly hatched, SD=shallowly, M=medium, A=approx 1/2 size or about 1/4 size, N=early neuged, adult size, FLY= fledged; ; FO=foraging; U=unknown age, CARC = carcass, include chick size/age. Goal: Did at least one
Chicks (total # and age class)	0=none, 1=1st yr, 2=waves, 3=native Land mammal (specify), 4=non-native Land mammal (specify), 5=Aquatic Mammal, 6=Gull (specify), 7=Raptor (specify), 8=Corvid (specify), 9=Other avian (specify), 10=Human
Impacts (Type)	11=Human Non-Deer, 12=Deer, 13=Diving, 14=Fish, 15=Dot (specify), 16=Deer, 17=Other avian
Impacts (Response)	0=None, 1=Adult alerted, 2=Adult flushed, 3=Young alerted, 4=Young flushed, 5=Adult mortality, 6=Young mortality, 7=Eggs depredated, 8=Nest destroyed, 9=Other (describe).
Survey Quality	Poor=low confidence that nest status accurately assessed; Good = adequate data collection but some uncertainty, ie. that eggs/chicks were all seen; Excellent=low or no uncertainty regarding data collection.