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DUXBURY BEACH RESERVATION, INC.

Beach Management

4/4/22

abbreviated from original 10/28/2021

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Presentation Outline

- Endangered species program
- COI permit under the HCP
- What is a take exposure
- Discussion of mitigation credits associated with take exposures

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Listed Species Regulations

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Photos by: Stewart Ting Chong

Species Protection and Permits

	Piping Plover (PIPL)	Least Tern (LETE)
Legal Protection	• Federal Endangered Species Act • MA Endangered Species Act	• MA Endangered Species Act
Listing Status	Threatened (Federal & State)	Species of Special Concern (State)
Permits held by DBR	• Certificate of Inclusion under Statewide Habitat Conservation Plan • Conservation Management Permit	• Conservation Management Permit

Two listed species nest on Duxbury Beach April-September each year – piping plover and least tern

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Photos by: Stewart Ting Chong

ORV Set-backs from Protected Species

Protection	Piping Plover (PIPL)	Least Tern (LETE)
Nesting (eggs, scrapes, courtship)	• **50m** in every direction (where feasible)	• Determined by disturbance (**50 yds**)
Chicks	• **200m** N and S of brood range oceanside and bayside for week 1 • May reduce to **100m** if brood range is limited	• **100 yds N and S of nursery area**

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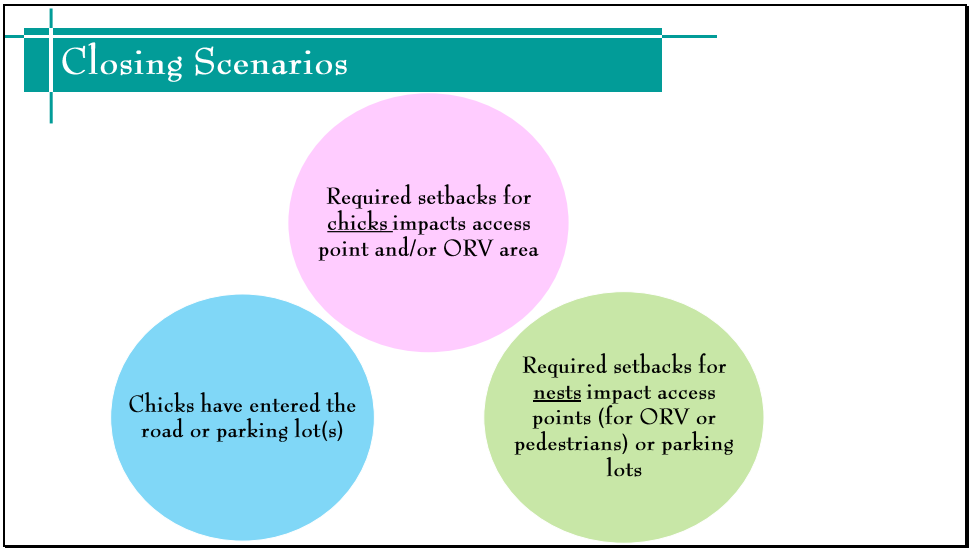

In general, on Duxbury Beach, there are three main reasons parts of the beach would close due to nesting activity– this is where the Habitat Conservation Plan comes in.

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Massachusetts Habitat Conservation Plan (HCP)

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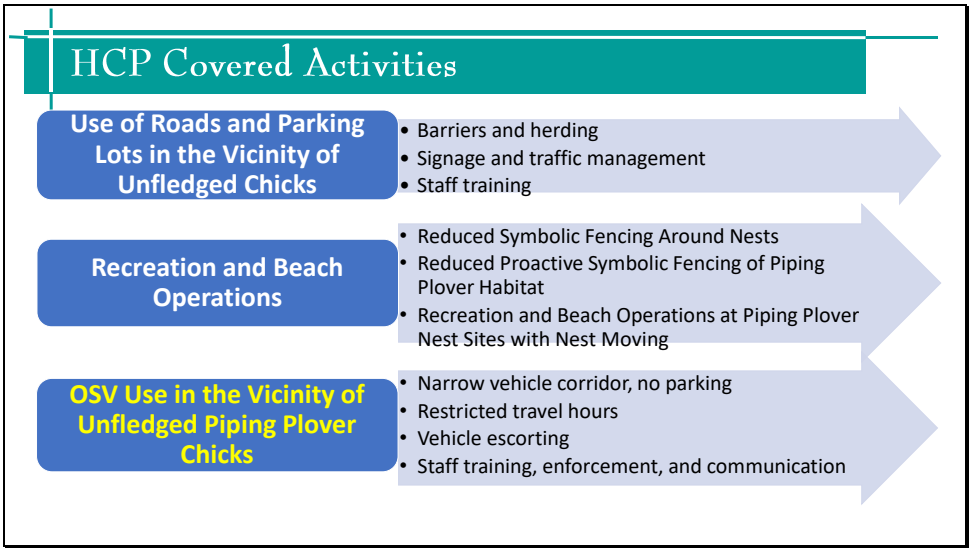

The HCP allows for three general "covered activities" in order to give more flexibility to beach managers trying to allow recreation on beaches with nesting activity. There are certain limits and conditions to each, as outlined in the HCP (including certain conditions and limits to the activities under Rec and Beach Ops). Currently, DBR has the first two under its Certificate of Inclusion (COI) and Conservation Management Permit (CMP).

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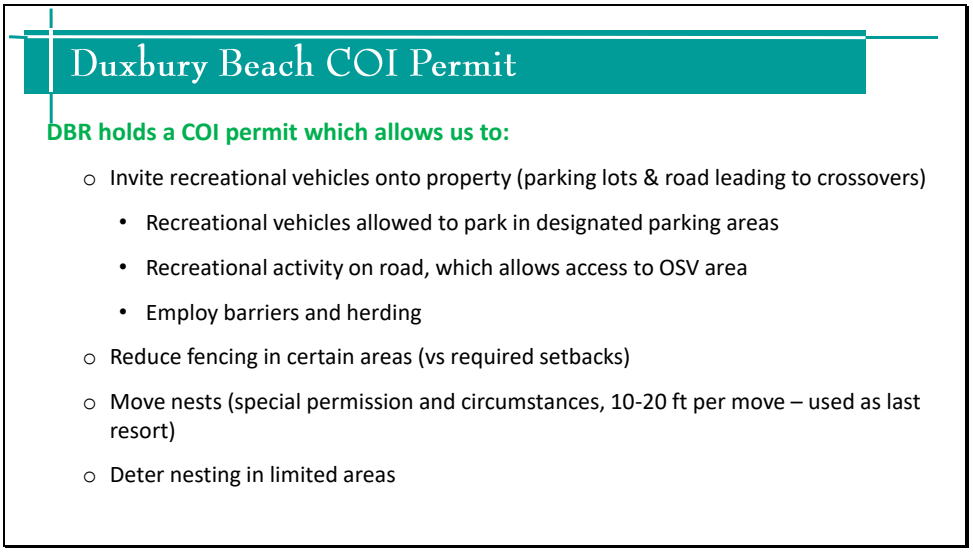

These permissions (in limited capacity) are included in the covered activities, “use of road and parking lots in the vicinity of unfledged chicks” AND “recreation and beach operations associated with certain activities”

Takeaway – nest moving and deterrence measures are useful and intended to help keep parking lot and key access paths open during the nest phase <u>NOT</u> chick phase. These activities cannot and should not be used in every circumstance.

Nest moving challenges/example:

- Often there are multiple pairs within 200m of a Crossover. For example, there may be 3 pairs within 200m of Crossover 1, 2 pairs within 200m of Crossover 2, and 3 pairs within 200m of Crossover 3 – we will not get permission to move all of those nests out of the 200m buffer zone. Consider a scenario where the closest nest to a crossover was 42m – if we want to increase our chances of having that crossover open when the nest hatches we would need to move the nest a minimum of 158m (518 ft), for an average of 20 ft per day. This is the max per day and may not be allowed by regulators or feasible based on bird behavior. In the event that the plan was approved, it’s highly likely that the pair would reject the move on some days and the process would be paused (indefinitely). Even if we did succeed in moving the nest 158m, once hatched the chicks move, often considerable distances. Given that the pair originally chose a nest site close to the crossover it is likely that they would move their chicks back to that area. We can not get permission to herd or bar chicks from areas of the beach.

Deterrence notes:

- As stated above, there are multiple pairs that impact the Crossovers and cause the closures. Reduced fencing (deterrence) is limited to 2 acres on a site – it would take approximately all 2 acres to deter nesting covering all the habitat within 200m of a crossover (in one direction only). In the end, the crossover would still close due to the chicks that hatch in the other direction of that crossover OR once chicks hatch from pairs pushed away from the crossover. This would also mean we would not have the ability to deter if a pair started nesting in an even less desirable area (middle of pedestrian path, resident lot, resident overflow lot, etc.).

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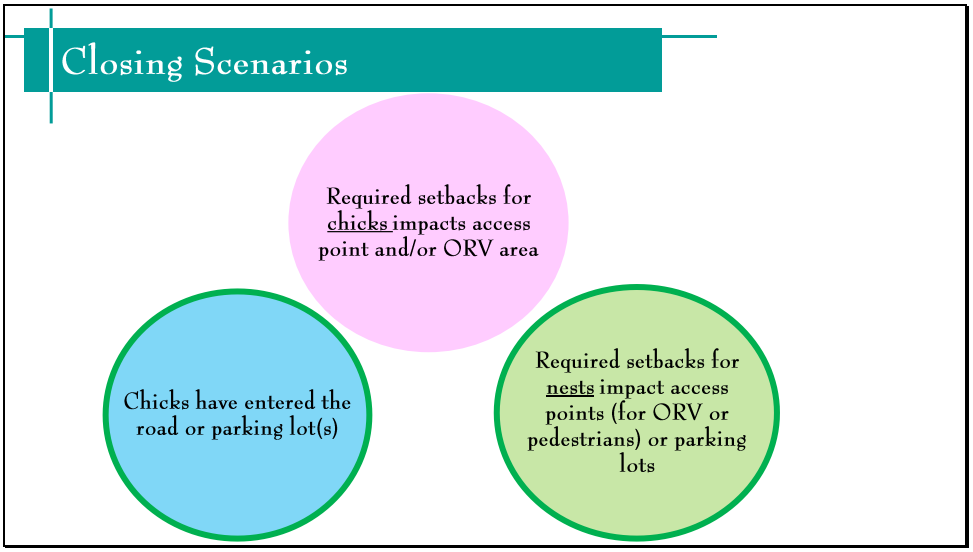

With our COI, we can address (and hopefully solve, though that is not guaranteed and is based on how the birds respond to our actions) many of the closing scenarios for broods entering roads or parking lots and closures associated with nests (closing scenarios circled in green). However, there are different rules and challenges once nests hatch and become chicks.

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Implementation and Alternatives Related to ORV Access

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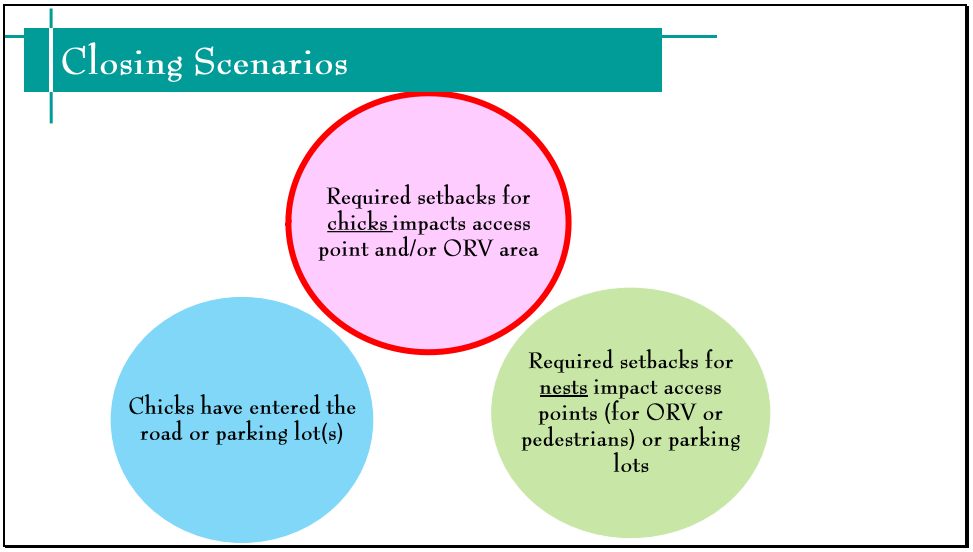

As discussed, these lower two closing scenarios are addressed under the current COI – there are still impacts based on chicks in the road/parking lots and based on where nests are located but we can typically avoid complete closures. Now we'll address chick impacts to ORV access and what the options are under the HCP.

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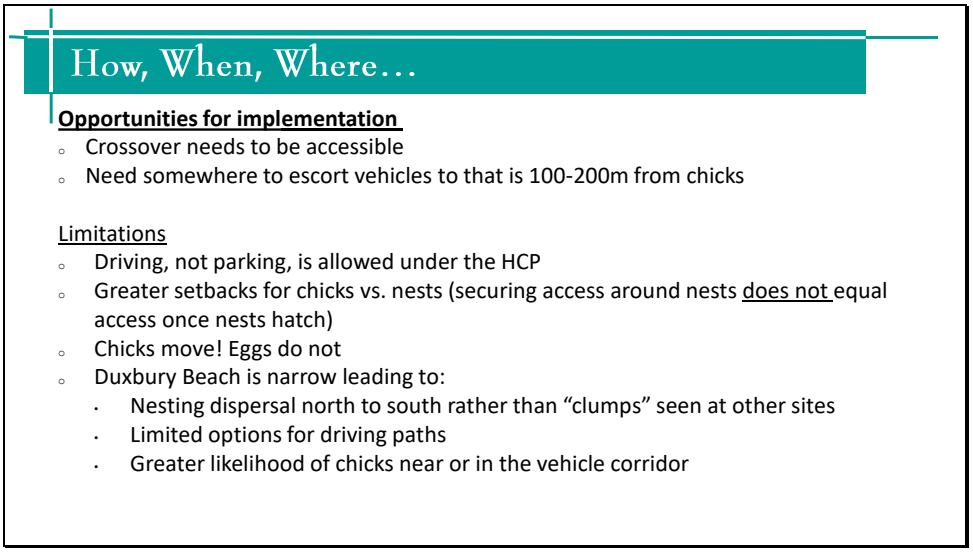

The HCP has some opportunities for driving past chicks on ORV beaches. However, there are specific conditions that need to be met, so even if the activity were covered under DBR's COI, there also needs to be opportunity to implement. These conditions are unlikely to be met on Duxbury Beach.

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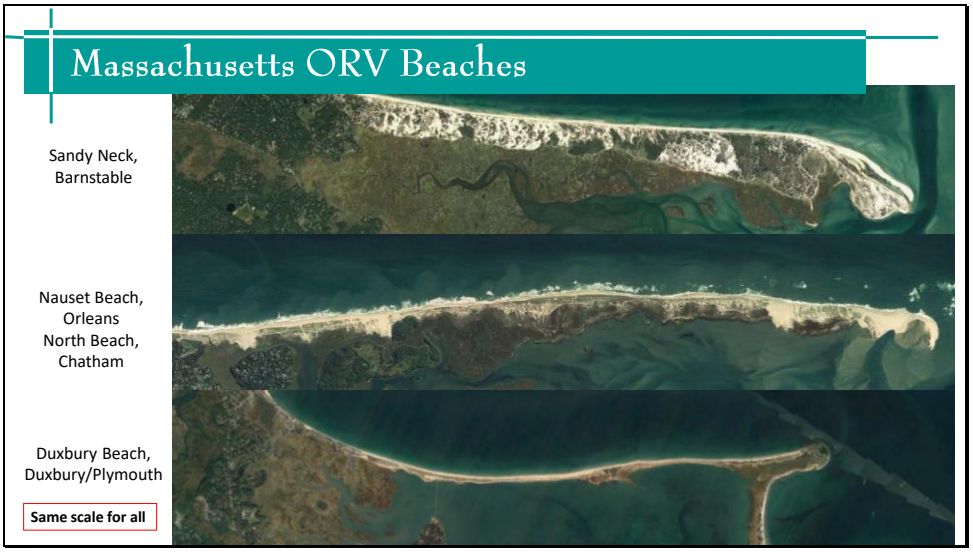

Duxbury Beach is different from other beaches that have ORV because of where nesting is and its size

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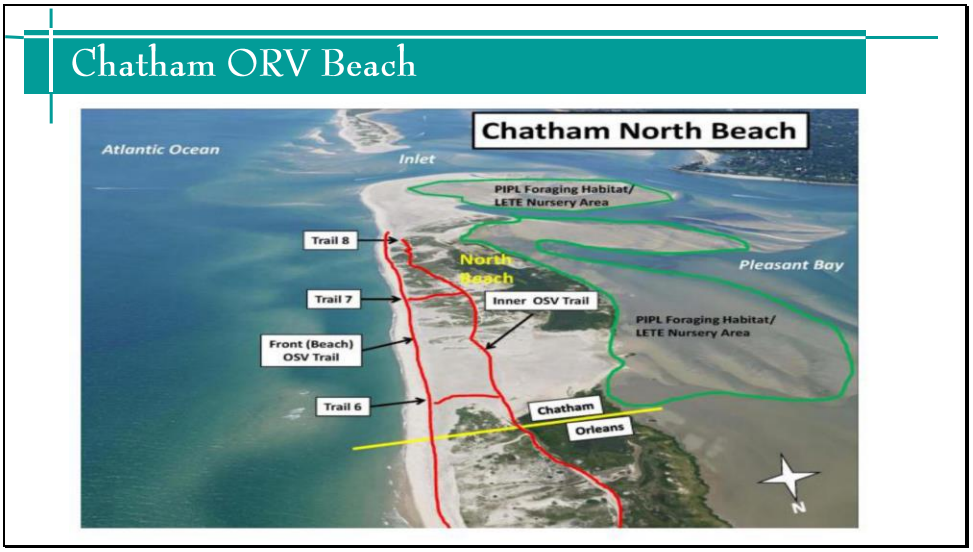

Above is an example of how other beaches have options for vehicle access (red lines) and "clumps" of nesting activity (green). These clumps of nesting activity are important because they allow ORV users to drive past chick areas to chick free zones. On Duxbury Beach, the nesting activity spans almost the entire beach. This means that there is not the same opportunity to escort vehicles to a "chick free zone". Vehicles can't park in close proximity to chicks.

There is also more separation of the driving corridor and the chick areas because the beach is wide – the HCP specifies that even during the "open travel times" the vehicle corridor must temporarily close if chicks come near the corridor. On other sites this buffer zone ranges from 50-100ft. The front beach on Duxbury Beach is not wide enough to accommodate this and even with permissions for reduced buffers chicks would be constantly crossing back and forth over the vehicle corridor requiring it to temporarily close many times during the escort period (could lead to the travel window closing before all vehicles can get on or off the beach).

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Duxbury Beach Distribution

Nests are everywhere……

- Plovers – solitary = distributed throughout the beach
- Least terns – colonial = nest in groups

The key takeaway is that, unlike other ORV beaches, we neither have available access to the ORV beach or space on the ORV beach for parking away from chicks.

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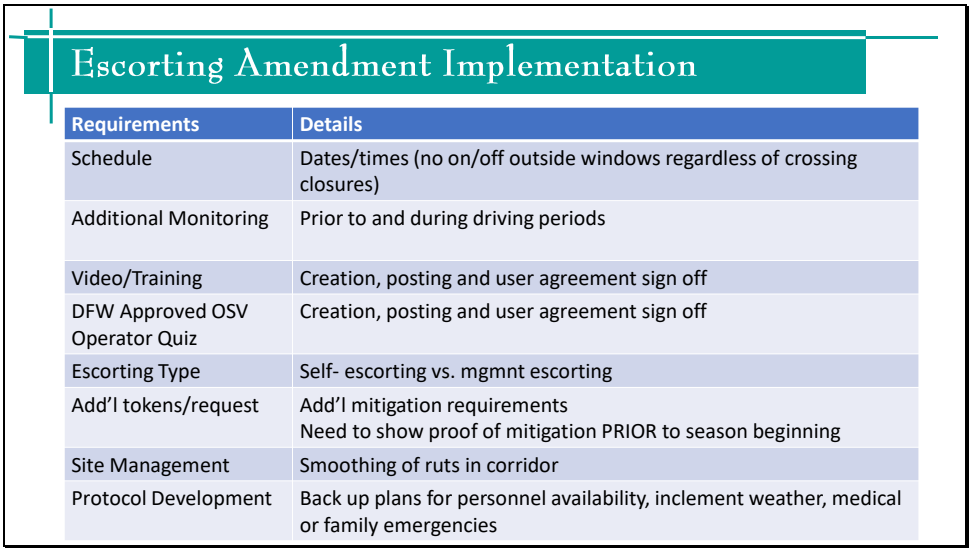

Including escorting in DBR's COI is not as simple as checking a box – DBR and the Town would need to implement a host of new plans and protocols impacting staff and beach visitors.

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Escorting: Pros/Cons

Pros

- MAY increase number of days ORV area can be open
- MAY increase number of vehicles allowed on beach

Cons

- Beach goers essentially “trapped on beach” based on travel windows and bird activity
- Management and oversight prior to and during implementation
- Additional staff coverage necessary during unpredictable windows of the summer
- Last minute closures or reductions of ORV area more likely

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Piping Plover Take Exposures & Mitigation

Determine how many take exposures should be requested in the COI to allow beach to remain open (per permit and mitigation requirements)

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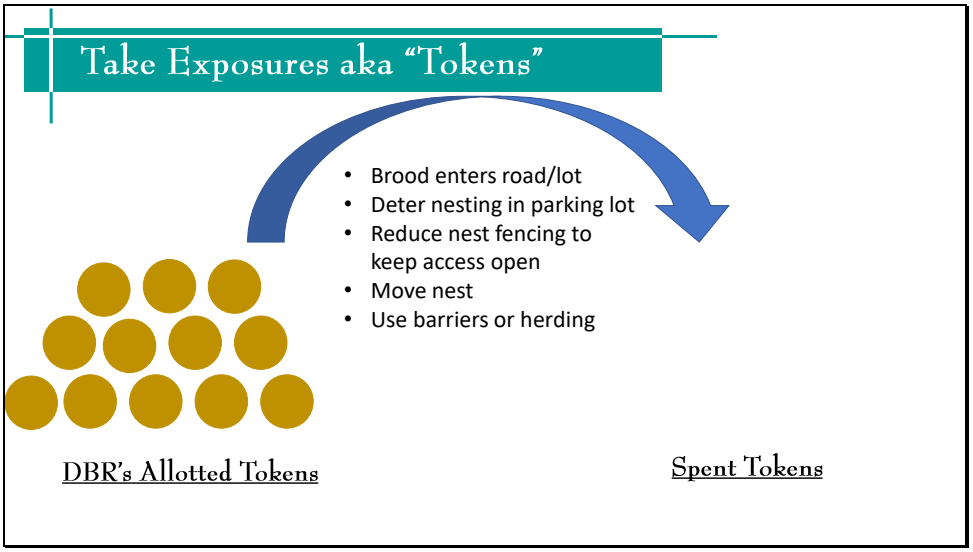

CURRENT

As part of our COI for the MA HCP we have 12 take exposures. The simplest way to think about this is as 12 tokens.

- Every time a brood enters a parking lot or the back road in an area where recreational vehicles are allowed, we spend a token.
- It doesn't matter if that brood fledges or is lost or never enters the road again, we cannot get the token back.
- Each time one of these activities is implemented with a new brood a token is spent. As a reminder, there were 31 pairs on the beach last season.

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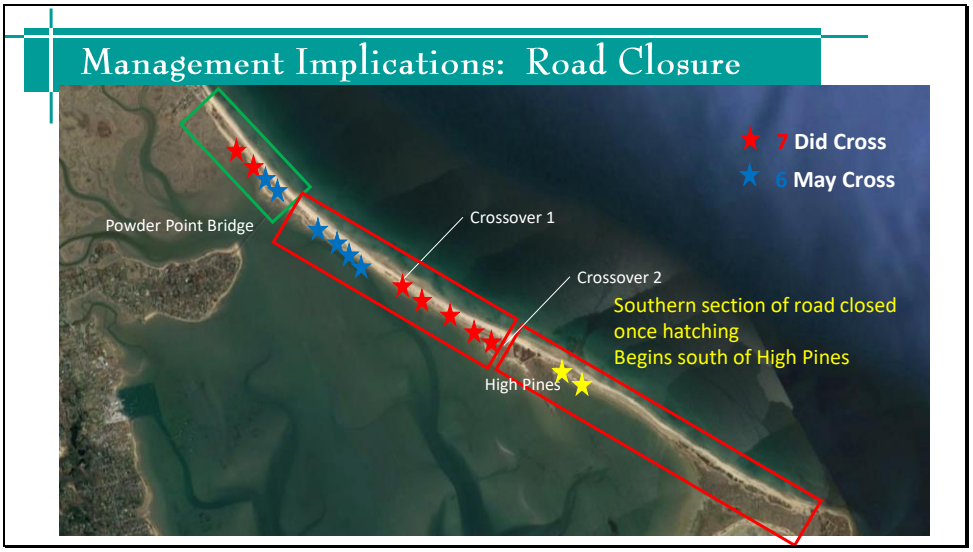

We **haven't** closed the ORV due to a token issue, but it is a concern each year and we must actively manage the process to ensure that the largest amount of beach stays open

We have to be very intentional/selective on token usage

EXAMPLE:
In this scenario, DBR has 12 tokens. We spend a token every time a new brood crosses the road/parking lot in an area with recreational activity. Once we run out of tokens, we have to shut down the beach anywhere within 1000m of piping plover chicks until they are fledged – this would mean shutting down the whole site to recreation for much of the summer.

However, this is gamble, because there are upwards of 31 pairs on the beach – if all of those pairs hatch chicks and cross the road, then we would be well over the 12 token limit. To help better our odds, we close the road to recreation south of High Pines as soon as chicks start hatching down there. That means, even if broods start crossing the road to the south, they don't count as tokens. This means pull-outs south of High Pines need to be closed.

But still, more than 50% of the pairs nest north of High Pines and many of them cross the road. And we still have a bunch of other broods that could cross – if they all cross, the entire site closes because we'd hit 13 tokens. Our priority at this point would be to reserve enough tokens so that we do NOT have to close the entire site (meaning, keep parking lots open at minimum). We'd have to see what options there were depending on brood locations. Maybe we could close just Crossover 2 and "save" tokens. In this pretend scenario though, we'd likely have to

take the gamble and wait to see how many started crossing. Or we could wait until we got to 10 tokens and close the OSV, reserving those last two tokens for broods north of the bridge.

If one of the Crossovers or both of Crossovers close because of bird activity on the front beach (separate from the crossing activity), it is important to close the back road to recreation south of any open access points (and close the pull-outs). To keep it simple, let's say both crossovers close. Now, we've already spent some of our tokens and we don't get them back once the road closes in that area, but if any of these broods start crossing – we don't spend tokens and we stay well below our 12 token limit. This either helps us reopen without worrying about token limits or we reserve some mitigation credits for the next year.

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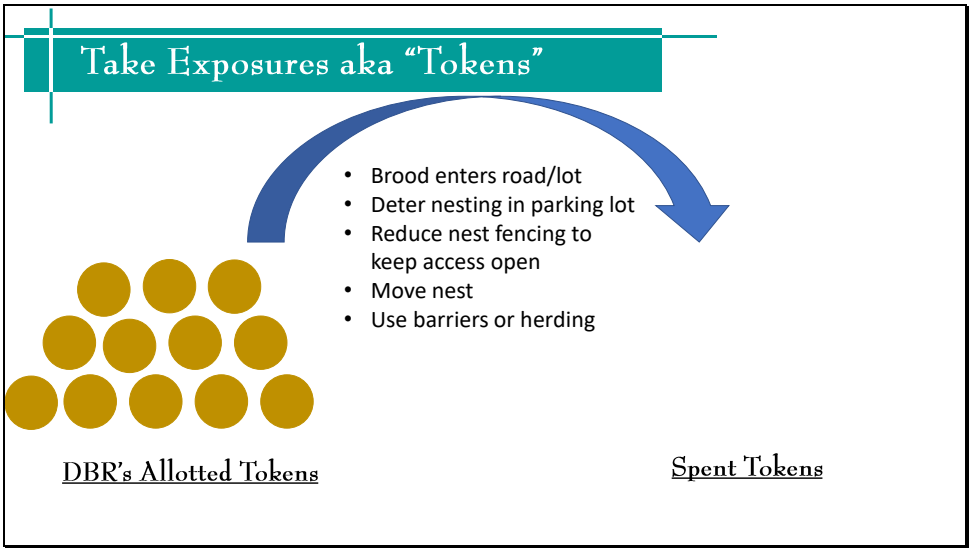

The example on the previous slide only accounted for crossing activity (when a brood enters the road or a parking lot). However, we have to remember that we use tokens for other activities. With limited tokens, we have to consider each token use and whether it will be success at maintaining or improving access OR if it will increase the risk of having to close the entire because we've run out of tokens.

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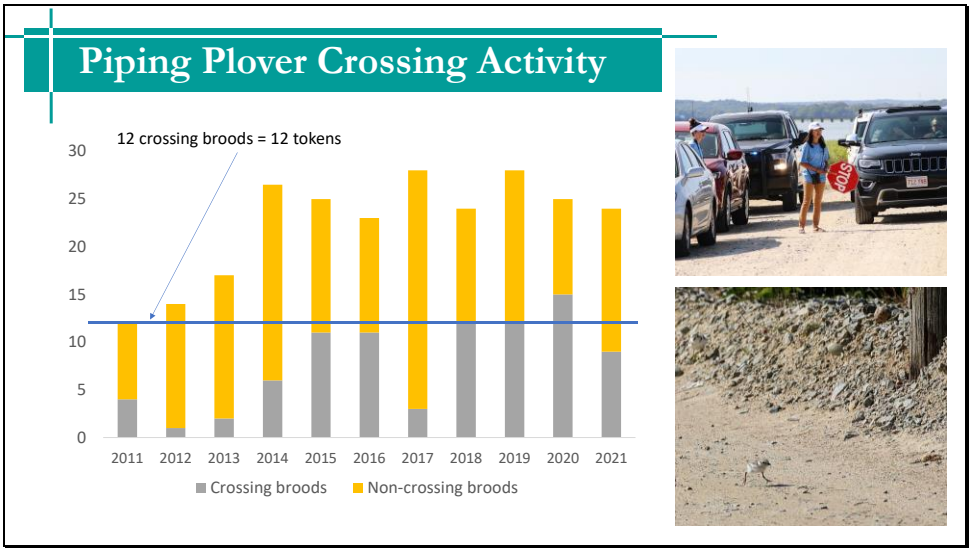

Takeaway: There are a lot of broods that cross the road at Duxbury Beach! If we do not actively manage access in certain areas (note: this does NOT mean closing the OSV due to crossing activity) then we could run out of tokens and have to close the site until broods fledge.

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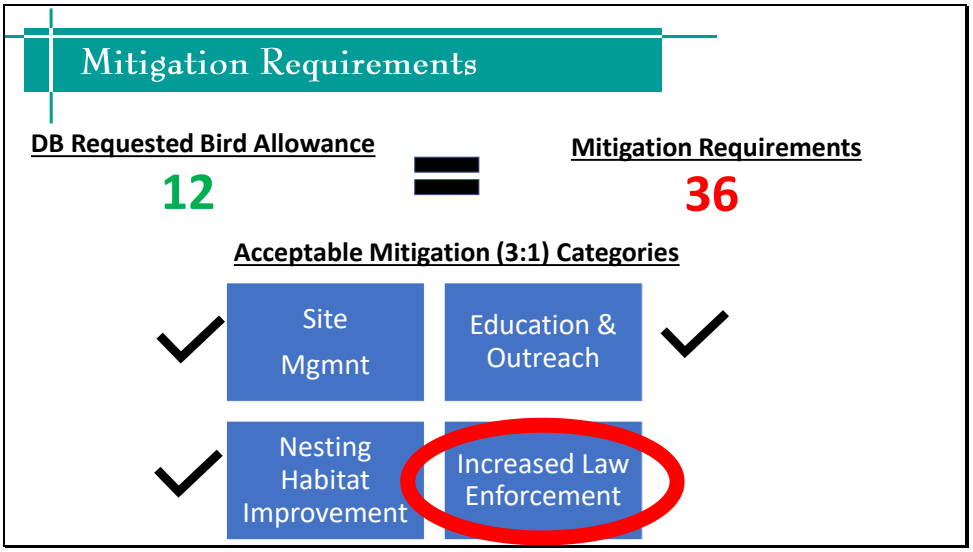

Use of roadways/parking lots and OSV requires 3:1 mitigation. Actions that either increase the number of tokens we use/need and/or decrease the amount of mitigation we can accrue during the season means we need additional mitigation sources.

DBR has maxed out on what mitigation we can perform. The last piece is Increased law Enforcement which needs to be above and beyond what is expected to manage the site related to protecting listed species.