

Risdens

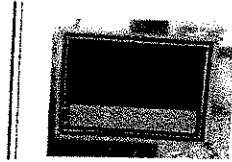
Peter Ritchings - EMG <pritchings@emg-environmental.com>

Sat 4/14/2018 9:21 AM

To: Stephen Reid <sreid@pointbeach.org>; pmkanitra@hotmail.com <pmkanitra@hotmail.com>; Christine Riehl <Criehl@pointbeach.org>; Ray Savacool <RSavacool@tandmassociates.com>;

1 attachments (2 MB)

IMG_20180414_083541466.jpg;



The sand was removed at the end of the ramp the other day however the ramp is still blocked off and this is a sign that's been posted at the end of the ramp. Risden's claims this is their property however I've also been told it is part of the boardwalk easement. I fully intend to use this ramp this summer. I just want to make sure I have a leg to stand on if Risden's reports me for trespassing

Rec Committee Meeting- important, first meeting, much to discuss

Robert Santanello <bsantanello@comcast.net> on behalf of bsantanello@pointbeach.org

Mon 1/21/2019 2:02 PM

To: 'Aportela' <[REDACTED]>; 'Barbara Seaman' <[REDACTED]>; 'Carol Ann Ammirata' <[REDACTED]>;
<[REDACTED]>; <[REDACTED]>; d [REDACTED] <[REDACTED]>; 'Ellsworth, Maryann'
<[REDACTED]>; 'John Babbini' <[REDACTED]>; Judy Schaller' <[REDACTED]>; 'Patrick
Cavanaugh' <[REDACTED]>; <[REDACTED]>;

Cc: Stephen Reid <sreid@pointbeach.org>;

Importance: High

Hello Rec Committee Members-

Please do your best to attend our first meeting of 2019, next Monday 1/28 at 6:30 PM.

There is much to discuss, including:

What to spend our annual stipend on from the Open Space Committee

Location for Best Day 2019- hopefully Risdén's, now Jenkinsons

First events on 2019

What to do about the Summer Rec Director

Ways to improve our participation for the tug-of-war in 2019, including attendance from a Chamber of Commerce member.

We're hoping the Mayor can join us as well if he's in town.

Thanks-

Bob

Bob Santanello
Councilman
Borough of Point Pleasant Beach
208 Central Avenue
Point Pleasant Beach, NJ 08742
732-714-9589
bsantanello@pointbeach.org

NRTAC MEETING-SURVEY COMMENTS-JUNE 9. 2018

Seth Sloan <[REDACTED]>

Mon 7/2/2018 2:03 PM

To: Stephen Reid <sreid@pointbeach.org>; sreidassoc@yahoo.com <sreidassoc@yahoo.com>; Councilman Bob Santanello <bsantanello@comcast.net>; Robert Santanello <bsantanello@pointbeach.org>; [REDACTED]; NRTAC-Vic Deluca <[REDACTED]>; NRTAC-Arlene Wright <[REDACTED]>; NRTAC-Dominic Barone <dominic.barone@haymarketmedical.com>; NRTAC-Mary McAndrew <[REDACTED]>; NRTAC-Bob Rinaolo <[REDACTED]>; NRTAC-Keth Sluka <ksluka@myinvestorsbank.com>; NRTAC-Lynne Mortimer <lynne.mortimer@cbmoves.com>; Condo-Tony Andretta <[REDACTED]>; NRTAC-Victor Fortkiewicz <[REDACTED]>; Seth Sloan <[REDACTED]>; NRTAC-Rose Fabiano <[REDACTED]>

Cc: Seth Sloan <[REDACTED]>

1 attachments (50 KB)

NRTAC MEETING-SURVEY COMMENTS-2018.docx

Subject: NRTAC MEETING-SURVEY COMMENTS-JUNE 9. 2018

NRTAC MEETING-JUNE 9, 2018-SURVEY COMMENTS

NOTE: These comments are almost as written by the attendees.

MEETING

Vic DeLuca is excellent.

Moderator did great job of facilitating-keeping us on schedule.

Lawn signs great idea.

Town alert is excellent

Best meeting so far -great job.

Fills a need- wonderful to see so many interested residents.

I have been to multiple of these meetings and the speeches are getting redundant. Q & A is better than speeches.

Good flows keeping meeting and questions moving quickly-yet covered everything.

Great to access to officials who are able to address our concerns

Perhaps Q & A can be one on one to appropriate speaker rather than questions addressed to whole panel.

Some of the speakers could speak more clearly.

Ray could answer questions better.

It would be good to remind people to bring up problems that affect the town experience. If their question is just theirs, ask for whom they need to talk to instead of trying to work with 200 people waiting.

Very good to know the town cares about us.

Speakers-all prepared and ready.

Meeting room too cold.

Speakers-more detail-very vague.

I am proud and happy to live in PPB! Thanks for the venue.

Great info shared-very good use of time.

Very good and informative.

Very impressed and informative.

Speakers could be more detailed.

Very informative.

Thank you for your time

Very informative.

Yes-very informative.

Very informative.

Very informative-thank you.

Meeting positive.

Informative.

Q & A best part of meeting.

Thank you for all your efforts.

Nice job, thank you.

Handouts on real estate very good.

Meeting productive- yes-thank you for all your time.

Speakers-I thought everyone was great.

Speakers did a nice job giving important info and keeping it short.

Meeting-absolutely productive.

Q & A period-some people will never be happy-but thank you for trying to help.

Keep working on Veterans Adm., help much needed.

Overall comment-thank you.

Overall comment-thank you. 2nd person

Speakers-good.

Thank you great meeting.

Very pleased you are having these meetings.

Very good information was noted.

Speakers-thank you.

Note next to Mayor ratings it says-no George (dog).

Panel seemed to properly answer questions and promise to address issues.

Real estate agents speech was very dull. Its nice to know there is growth in real estate but reading a list of statistics is dull and uninteresting and only makes taxpayers tune out.

Joanne Platz would have been better if she did less reading.

Q & A interesting but individual issues should have other avenues to address.

Councilman Santanello is not in touch with what is going on, taxes have gone up significantly in the last 10 years even though assessed values have gone down.
(no name)

We support Mayor's vision of family and friendly town! Keep it up.!
UNKNOWN PERSON A.

FLOODING, ETC

Water drainage in this town is a chronic problem and never solved. It only gets worse as seen from all the non-resident questions. The problem never gets resolved.
Answer not acceptable when is the accountability counts.

Flooding Boston/Sanborn. Flooding is a major problem at all meetings.

Street flooding is a problem.

How is pumping runoff from the town into the ocean environmentally ok or friendly.

Flood problem-300 Philadelphia Ave.-also floods like a lake in the rain.
No sewer drains on the street. Thank you.

Next year-Inlet is filling with sand because of the beach FYI replenishment.
We will constantly dredging it as long as we keep pumping it onto the beach.

Next year-hope by then Washington and St. Louis water problems (flooding) be fixed.

POLICE, FIRE, EMT

Police Chief, Fire Chief and EMT doing great job --in ratings column on survey

Police presence is excellent.

Police force does an excellent job.

UNKNOWN PERSON A

Police Chief-very caring.

Police congregate in groups of 4 to 6 in the same spots on the boardwalk, on their cell phones.

Laws are made but not consistently enforced.

Too many cops not doing anything.

Police bikers should have lights.

A lot of FT/cars Police for 2 square miles of town especially in the winter and police cars.

Last fall there were several bonus beach days in September and October and the water was very rough. Unfortunately, a man drowned since there was no supervision.

Good presentation at micro details, but missing is overall macro picture answering what if PPB'S govt strategy is keeping the town as a safe family friendly place to live?

Everyone gave good presentations. It would have been helpful to give Chief Michigan more presentation time regarding police department activity and status.

Many cars drive the wrong way down Inlet Drive-can the town add one way signs along Inlet Drive to avoid accident, thanks!

Sidewalk is blocked on NJ Ave. by the tracks by JCP&L office.

Police-makes us feel good and safe, not only when we are here but also and more important when we are not.

Love the security program the police dept. has for absent/seasonal owners checking on homes was hoping to hear more about it.

One way for Sanborn Ave., four way stop sign at Boston,

Need more info on knox box.

Love hearing from FD about knox boxes.
Would like to have seen sample.

TOWN

When walking from Shore Point to Wharfside there are overgrown plants and weeds which makes you walk in the street instead of the sidewalk. Just ask owners to trim, please. UNKNOWN PERSON A.

Why not use the parking around the inlet bathroom for paid parking. This is wasted valuable space that could be earning income to pay for bathroom expenses, employees, etc. UNKNOWN PERSON A

PLEASE CONSIDER A PUBLIC BATHROOM AT THE SOUTH END OF THE BOARDWALK OR NEAR BY, THANK YOU.

Regarding water bill, why does 3 quarters cover the peak months so the residents are sure to go over and pay exorbitant fees. Meanwhile, most people are way under the quotes the rest of the year. This is unfair and an obvious ploy to get more \$ from home owners.
UNKNOWN PERSON A

Is town exploring possibility of shared services with neighboring communities to save money?

Similar to combining DPW and water.

Agree with audience comment, re: recycling on Saturday. We don't need 7 days of garbage paid up and only 1 time a week. Have 4 or 5 days of garbage and 2 of recycling. Problem solved!
UNKOWN PERSON A

COMMUNICATIONS AND EXTRAS

Although NRTAC for years, we were NOT AWARE THE COMMITTEE EXISTED nor of this meeting until we received a letter this year.

Have an email where residents could ask questions and get answers.

Could town send email blasts to property owners to inform them of events and ordinance changes.

Are there minutes in case you cannot attend?

Then have someone during the meeting sort them, generalize them and then answer them so they're useful to all.

Is there an avenue to address concerns or suggestions other times of the year?

Was very happy to find out about the council for non-residents and I hope it will continue.

Jenks--How about a sand sculpture contest.

UNKNOWN PERSON A

UPDATE: It cannot be done, the sand is too soft.

Next year-coffee and donuts. (gave name)

Next year--Serve coffee and refreshments and for people to have time to chat and get to know each other. (gave name)

Next year-Have a vendor area in lobby or just outside meeting place.

NEXT YEAR

Next year-this years meeting very good-follow in same way in future.

Next year-discussion addressing renters (short term) rules and regulations.

Next year-need contact info for Risdens and Martells.

Next year-real estate taxes and relationship between more expensive homes being built and taxes going down.

Next year-changing the Q & A, possibly if your question applies to you and not the majority, they could speak to the individual one on one and the line is only for town issues. I'D prefer to speak to someone after the meeting one on one.

Next year-banning plastic straws.

Next year-address how local occupancy laws apply to and are applicable to airbnb.

DUPLICATED-SHOWN ALSO IN ANOTHER SECTION

Next year-hope by then Washington and St. Louis water problems (flooding) be fixed.

Next year-coffee and donuts. (gave name)

Next year-cut people off that go on and on.

Next year-address Saturday garbage pick ups or drop offs for rental properties.

Next year-keep time limits on each Q & A topic.

Next year--Serve coffee and refreshments and for people to have time to chat and get to know each other. (gave name)

Next year-Have a vendor area in lobby or just outside meeting place.

Next year-continue to move at a reasonable pace as you did this year.

Next year-personal questions could be handled more quickly with follow up appointments with the appropriate town official or vendor.

But we understand that people like to have their time at the microphone.

Next year-Inlet is filling with sand because of the beach FYI replenishment.
We will constantly dredging it as long as we keep pumping it onto the beach.

Next year-Maybe have people write questions on cards upon arrival

Next year-coffee and donuts. (gave name)

Lawn Sign Proof

Seth Sloan <[REDACTED]>

Tue 5/15/2018 11:12 AM

To: sreidassoc@yahoo.com <sreidassoc@yahoo.com>; Stephen Reid <sreid@pointbeach.org>; Councilman Bob Santanello <bsantanello@comcast.net>; Robert Santanello <bsantanello@pointbeach.org>;

Cc: Seth Sloan <[REDACTED]>;

1 attachments (384 KB)

SIGN PROOF_3.pdf;

Fyi

Signs will be on display at the following places somewhere between May 16-June 9.

Places at this time:

Ocean Star

Sand House

Bain's

The Amethyst

Shrimp Box

Garden State Yacht -only week before meeting

Paul Ward

Risden

Lynne Mortimer-committee member

They wish to have sign on their lawn-
2 comm members

Waiting for answers:

Trying to contact Lobster Shanty and 1 other

SARAH JACOBS
GRAPHIC DESIGNER

ALL POINTS PRINTING & GRAPHICS
TEL 732-392-6670 FAX 732-892-6646
EMAIL sarah.allpoints@gmail.com

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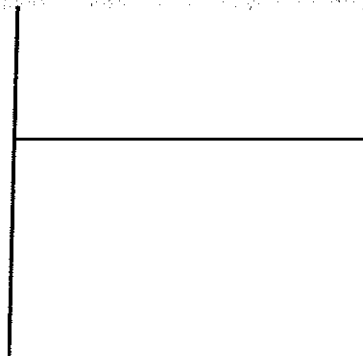


All Points
PRINTING & GRAPHICS

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Point Pleasant Beach
NON-RESIDENT
MEETING
RESIDENTS WELCOME
Saturday • June 9th
10am-12pm
Antrim School Auditorium



LAWN SIGNS

QTY: 8

18" X 24" COROPLAST

FULL COLOR

METAL STAKES

(\$25 PER SIGN - DISCOUNTED TO \$15 PER SIGN)

RE: Boardwalk Access

Peter Ritchings - EMG <pritchings@emg-environmental.com>

Tue 5/8/2018 3:00 PM

To: Christine Riehl <Criehl@pointbeach.org>; Stephen Reid <sreid@pointbeach.org>; pmkanitra@hotmail.com <pmkanitra@hotmail.com>;

I'm not a big proponent of slapping up signs, however it appears that Risdens is intent on preventing people from using this access to and from the boardwalk. Perhaps the Borough should put up a sign identifying the Boardwalk Access?

Regards,

Peter Ritchings
President
Environmental Management Group, Inc.
1705 Bay Avenue-Suite 6
Point Pleasant, N.J. 08742
732 282-2222

-----Original Message-----

From: Christine Riehl [<mailto:Criehl@pointbeach.org>]
Sent: Tuesday, May 08, 2018 9:52 AM
To: Peter Ritchings - EMG; Stephen Reid; pmkanitra@hotmail.com
Subject: RE: Boardwalk Access

No, we did not install that sign.

Christine Riehl,
Borough Administrator
Chief Financial Officer
Tax Collector
732-892-8770

-----Original Message-----

From: Peter Ritchings - EMG [<mailto:pritchings@emg-environmental.com>]
Sent: Tuesday, May 08, 2018 8:12 AM
To: Stephen Reid <sreid@pointbeach.org>; Christine Riehl <Criehl@pointbeach.org>; pmkanitra@hotmail.com
Subject: Boardwalk Access

Another sign installed by Risdens or was this one installed by PPB? There's also a seismic monitor right next to the sign?

Risden's Beach Maintenance

Peter Ritchings - EMG <pritchings@emg-environmental.com>

Tue 5/8/2018 8:44 AM

To: wendy_walsh@fws.gov <wendy_walsh@fws.gov>; Virostek, Eric <Eric.Virostek@dep.nj.gov>; Stephen Reid <sreid@pointbeach.org>; Christine Riehl <Criehl@pointbeach.org>; pmkanitra@hotmail.com <pmkanitra@hotmail.com>;

1 attachments (51 KB)

IMG_20180508_080245602 (3).jpg;

The contractor graded/disturbed areas to the right (south) of the access point. I recall that you requested that Risden's require that the contractor when accessing the beach angle the equipment and grading activities to the north. In this case, the disturbance actually extends beyond Risden's boundary onto the north end of New York Ave. Beach.

Peter Ritchings
President
Environmental Management Group, Inc.
1705 Bay Avenue-Suite 6
Point Pleasant, N.J. 08742
732 282-2222

Your message is ready to be sent with the following file or link attachments:

IMG_20180508_080245602 (3)

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Riden's Beach Maintenance

Peter Ritchings - EMG <pritchings@emg-environmental.com>

Tue 5/8/2018 8:28 AM

To: wendy_walsh@fws.gov <wendy_walsh@fws.gov>; Virostek, Eric <Eric.Virostek@dep.nj.gov>; Stephen Reid <sreid@pointbeach.org>; Christine Riehl <Criehl@pointbeach.org>; pmkanitra@hotmail.com <pmkanitra@hotmail.com>;

 1 attachments (50 KB)

IMG_20180508_080008806.jpg;

Wendy:

I just returned from Seattle last night to observe that ongoing beach grading/maintenance at Riden's has disturbed area where I believe Sea Beach Amaranth populations have been documented. Apparently the information had not been conveyed to the contractor doing this work and/or there was no supervision on the part of Riden's.

Peter Ritchings
President
Environmental Management Group, Inc.
1705 Bay Avenue-Suite 6
Point Pleasant, N.J. 08742
732 282-2222

Your message is ready to be sent with the following file or link attachments:

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Risdens

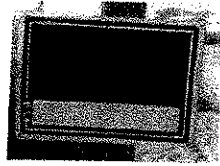
Peter Ritchings - EMG <pritchings@emg-environmental.com>

Sat 4/14/2018 9:21 AM

To: Stephen Reid <sreid@pointbeach.org>; pmkanitra@hotmail.com <pmkanitra@hotmail.com>; Christine Riehl <Criehl@pointbeach.org>; Ray Savacool <RSavacool@tandmassociates.com>;

📎 1 attachments (2 MB)

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FW: 2018 Seabeach Amaranth Protective Zone **Please Reply Confirming Receipt**

Eileen Farrell

Tue 4/10/2018 4:12 PM

To: Robert Santanello <bsantanello@pointbeach.org>; Thomas Migut <tmigut@pointbeach.org>; Thomas Toohey <ttoohey@pointbeach.org>; Stephen Reid <sreid@pointbeach.org>; Paul Kanitra <pkanitra@pointbeach.org>; Andy Cortes <acortes@pointbeach.org>; Thomas Vogel <tvogel@pointbeach.org>; Christine Riehl <Criehl@pointbeach.org>;

Cc: Patricia Kile <pkile@pointbeach.org>; Janet Mutter <jmutter@pointbeach.org>;

Importance: High

📎 1 attachments (3 MB)

2018-TA-0081 seabeach amaranth.pdf;

From: Galbreath, Dana [mailto:Dana.Galbreath@dep.nj.gov]

Sent: Tuesday, April 10, 2018 10:59 AM

To: Eileen Farrell <EFarrell@pointbeach.org>

Subject: 2018 Seabeach Amaranth Protective Zone **Please Reply Confirming Receipt**

Importance: High

Dear Ms. Farrell,

According to N.J.A.C. 7:7-10.2(b)7, the Division of Land Use Regulation, in conjunction with the United States Fish and Wildlife service, has determined that the attached 2018 Seabeach Amaranth Protective Zone list (for Fall 2017 through Fall 2018) includes areas for which you potentially conduct beach and dune maintenance activities pursuant to a coastal general or individual permit.

This is to advise you that the federally listed (threatened) and state listed (endangered) plant Seabeach Amaranth (*Amaranthus pumilus*) has become reestablished on certain New Jersey beaches, and it may be adversely impacted by unauthorized beach and dune maintenance activities. Pursuant to the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) (ESA) the U.S. Fish and Wildlife Service has delineated Seabeach Amaranth Protective Zones, and these zones are detailed on the attached list.

Please be advised that the U.S. Fish and Wildlife Service requires the following management actions within the protective zones to avoid adverse impact to the species. **Please review this information and be advised of these required conditions of your coastal beach and dune maintenance permits for the Seabeach Amaranth protective zone on your beach.**

1. Beach raking is prohibited from the landward limit of the beach berm (i.e., dune, seawall, bulkhead, boardwalk, commercial/residential structure) to the mean high water line from May 15 to November 30.
2. Sand scraping or other mechanical manipulation of the beach is prohibited year round.

3. Vehicle use is restricted to essential (non-routine) and emergency service vehicles within the designated protective zone from the landward limit of the beach to the Mean High Water line between May 15 and November 30.
4. In areas of high pedestrian traffic, string and post symbolic fencing shall be erected to route people away from the protective zones. The service may be contacted for site specific fencing recommendations.
5. Limit vegetation planting and sand fencing to dune areas, allowing the upper beach to remain unstabilized and sparsely vegetated. Use only native species of vegetation, in accordance with N.J.A.C.7:7-10.4(c).
6. If a particular beach area is not identified on the protective zone list as described above, but is subsequently found to contain a threatened or endangered beach plant, the Department shall notify you and the management actions 1 through 5 above shall be followed at the newly identified area.

Be advised that the areas inhabited by Seabeach Amaranth are often the same areas used by the threatened or endangered beach nesting shorebirds. However, the above recommendations do not satisfy other restrictions or replace ongoing management activities for the protection of beach-nesting birds.

It should be noted that if you do NOT have a current permit for beach and dune management activities, NO beach and dune maintenance activities (as defined at N.J.A.C. 7:7, Subchapter 10) may take place anywhere on your beach.

Should you have any questions concerning the areas of documented habitat, or other issues related to endangered or threatened plant species, please contact Wendy Walsh of the U.S. Fish and Wildlife Service at (609) 382-5274. Any questions concerning your need to obtain a coastal general permit or this letter should be directed to below signed at (609) 633-2289.

Sincerely,

Dana Galbreath
NJ DEP Division of Land Use Regulation
Mail Code: 501-02A
P.O Box 420
Trenton, NJ 08625
609-777-4191



In Reply Refer To:
2018-TA-0081

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Jersey Field Office
4 E. Jimmie Leeds Road, Suite 4
Galloway, New Jersey 08205
Tel: 609/646 9310
www.fws.gov/northeast/njfieldoffice/



Diane Dow, Director
Division of Land Use Regulation
New Jersey Department of Environmental Protection
P.O. Box 439
501 East State Street, Floor 2
Trenton, New Jersey 08625-0439
ATTN: Colleen Keller

OCT 24 2017

Dear Ms. Dow:

This letter transmits the U.S. Fish and Wildlife Service's (Service) recommendations for protection of the federally listed (threatened) plant seabeach amaranth (*Amaranthus pumilus*) on Atlantic coastal beaches within New Jersey for fall 2017 through fall 2018. This letter is provided as technical assistance pursuant to the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

RECOMMENDED PROTECTIVE MEASURES

The Service recommends managing the areas indicated below (protective zones) for the protection of seabeach amaranth over the next 12 months. The delineation of the protective zones was based upon the distribution of plants during the 2015 to 2017 growing seasons. Areas where no plants have been observed since 2014 are no longer listed as protective zones. The protective zones remain similar to those recommended in past years, with a few key changes.

The distribution of plants will likely shift annually; therefore, the Service will revise the recommended protective zones each fall based on the plant's known distribution in previous years. Beach managers and Coastal Area Facility Review Act (N.J.S.A. 13:19-1 *et seq.*) (CAFRA) permittees should be advised that the seabeach amaranth growing season is from May 15 to November 30; however, plants may not be evident on the beach until July. The Service may be contacted with any questions regarding seabeach amaranth and its protection, or to report a new occurrence of the plant outside established protective zones. The Service recommends the following management actions within protective zones.

- **Prohibit beach raking** from the landward limit of the beach berm (*i.e.*, dune, sea wall, bulkhead, boardwalk, commercial/residential structure) to the mean high-water line from May 15 to November 30. This prohibition should be reflected in CAFRA permits from the New Jersey Division of Land Use Regulation (DLUR). Applicants requesting a waiver from permit conditions regarding the length or width of a "no

rake” zone should contact the Service to arrange a site visit, and should be prepared to propose additional areas of suitable habitat elsewhere within the same municipality that will be managed for seabeach amaranth.

- ***Prohibit sand scraping*** (i.e., bulldozing) year round. This prohibition should be reflected in CAFRA permits from the DLUR.
- ***Restrict vehicle use*** to only essential (non-routine) and emergency services, and to the area below the mean high-water line. These restriction should be implemented from May 15 to November 30.
- ***Route people away from protective zones***, in areas of high pedestrian traffic, using string-and-post symbolic fencing. The Service may be contacted for site-specific fencing recommendations.
- ***Limit vegetation planting and sand fencing*** to dune areas, allowing the upper beach to remain unstabilized and sparsely vegetated. Use only native species of vegetation for any planting in accordance with N.J.A.C. 7:7E-3A.4.
- ***Coordinate surveys and monitoring with the Service.***

The above recommendations do not satisfy other restrictions or replace ongoing management activities for the protection of beach-nesting birds. The enclosed table gives plant numbers by municipality or other local jurisdiction. Beach managers can contact the Service for locational details.

In many areas, noted in the table below, the Service, the New Jersey Division of Fish and Wildlife, and local land managers have jointly approved a Beach Management Plan (BMP). Where an approved BMP is in place, the Service recommends that the conditions of any CAFRA permit require adherence to the provisions of the approved BMP, instead of reliance on shifting protective zones. Beach managers should note that some approved BMPs call for curtailment of beach raking and other activities based on occurrence of listed species even in designated “recreational zones,” and other BMP provisions to protect seabeach amaranth apply even if no plants have been observed in recent years. Beach managers should also note that, starting in 2016, the Service began asking for designation of shore-parallel, back-beach “plant protection strips” in all new and revised BMPs; see enclosed information.

PROTECTIVE ZONES AND BEACH MANAGEMENT PLANS

Protective zones and approved BMPs are listed below by county and municipality.

Jurisdiction	Protective Zones or Date of Approved BMP
Monmouth County	
Port Monmouth	<u>Protective Zone:</u> Bayshore Waterfront Park, beginning 400 feet south of the jetty (Pews Creek Inlet) and extending 1,400 feet east.

Jurisdiction	Protective Zones or Date of Approved BMP
Gateway National Recreation Area - Sandy Hook Unit	<u>Protective Zone:</u> The entire ocean-front beach outside of designated recreational centers, including the U.S. Coast Guard Station. <i>This is consistent with the approved 2009 Shoreside Threatened and Endangered Species Beach Management Plan, which is in need of updating.</i>
Sea Bright Borough	<u>Approved BMP:</u> Dated September 2015.
Monmouth Beach Borough	<u>Approved BMP:</u> Dated September 2015.
Seven Presidents Oceanfront Park	<u>Approved BMP:</u> Dated April 2016.
Long Branch City	<u>Approved BMP:</u> Dated May 2016.
Ocean Grove (Neptune Township)	<u>Protective Zone:</u> From the pier at Webb Avenue south to the Bradley Beach border. <i>The Service appreciates the cooperation of Ocean Grove in managing seabeach amaranth during the 2017 growing season. We recommend continuation of similar management provisions during the 2018 growing season. There should be no beach bulldozing in the protective zone even outside of the growing season, to avoid burial of the seedbank.</i>
Bradley Beach Borough	<u>Protective Zone:</u> From the Ocean Grove border extending south 200 feet.
Avon-by-the-Sea	<u>Protective Zone:</u> From the pavilion south of Norwood Avenue to Sylvania Avenue.
Belmar Borough	<u>Protective Zone:</u> Shark River Inlet jetty to the pier at First Avenue. <u>Protective Zone:</u> Second Avenue to Fifth Avenue. <u>Protective Zone:</u> North Boulevard south to the Spring Lake border.
Spring Lake Borough	<u>Protective Zone:</u> From the Belmar border south to Pitney Avenue. <u>Protective Zone:</u> From the southern end of the boardwalk to the Sea Girt Borough border. <i>The Service appreciates the cooperation of Spring Lake in managing seabeach amaranth during the 2017 growing season. We recommend continuation of similar management provisions during the 2018 growing season. There should be no beach bulldozing in the protective zone even outside of the growing season, to avoid burial of the seedbank.</i>
Sea Girt Borough	<u>Protective Zone:</u> From the Spring Lake border to Beacon Boulevard. <i>In this protective zone, permits should require Sea Girt to follow the June 2010 Settlement Agreement among the Borough of Sea Girt, the United States Fish and Wildlife Service, and the New Jersey Department of Environmental Protection (i.e., within the areas identified in the Agreement as "North Beach" and "Pavilion Beach").</i> <u>Protective Zone:</u> From New York Boulevard to Seaside Place. <i>Unless the 2010 Settlement Agreement is updated and converted to a BMP, the Service recommends that conditions of any permit issued for activities on Sea Girt beaches over the next year include the additional protective zone listed above.</i>

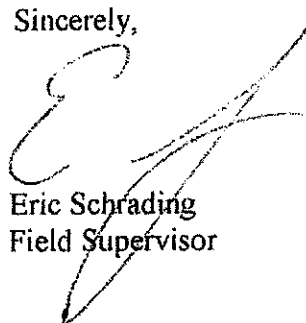
Jurisdiction	Protective Zones or Date of Approved BMP
Sea Girt National Guard Training Center	<u>Approved BMP</u> : Integrated Natural Resources Management Plan, dated March 2013.
Ocean County	
Point Pleasant Beach Borough	<u>Protective Zone</u> : From New Jersey Avenue to Philadelphia Avenue. <i>The above-listed protective zone supported 219 seabeach amaranth plants in 2017, or 40 percent of the Statewide total outside of Sandy Hook. This area is a high conservation priority, and includes two privately owned parcels—Block 46.02, Lot 3 (Risden's Beach Corp.) and Block 29.02, Lot 1 (Point Pleasant Beach Surf Club).</i>
Island Beach State Park	<u>Protective Zone</u> : From Elizabeth Avenue to Michele Lane. <u>Approved BMP</u> : Dated February 2017.
Barneget Light Borough	<u>Protective Zone</u> : The inlet and ocean front beach from the jetty south to East 5 th Street (south and east to approximately 39.757375, -74.096796). <u>Protective Zone</u> : East 20 th Street to East 22 nd Street. <u>Protective Zone</u> : East 24 th Street to East 29 th Street.
Long Beach Township	<u>Protective Zone</u> : Seaview Drive South to Sandy Cove Lane. <u>Protective Zone</u> : Panorama Drive South to Windrift Lane. <u>Protective Zone</u> : 300 feet north and south of 39.714792, -74.128037. <u>Protective Zone</u> : Emile Lane to Poseidon Lane.
Harvey Cedars Borough	<u>Approved BMP</u> : Dated January 2010. <u>Protective Zone</u> : Mercer Avenue to East Atlantic Avenue. <u>Protective Zone</u> : East Union Avenue to James Street. <i>Unless the 2010 BMP is updated, the Service recommends that conditions of any permit issued for activities on Harvey Cedars beaches over the next year include the protective zones listed above.</i>
Surf City	<u>Approved BMP</u> : Dated January 2011.
Edwin B. Forsythe National Wildlife Refuge	<u>Protective Zone</u> : Holgate Unit. <i>This is consistent with the approved 2004 Comprehensive Conservation Plan.</i>
Atlantic County	
Edwin B. Forsythe National Wildlife Refuge	<u>Protective Zone</u> : Little Beach Unit. <i>This is consistent with the approved 2004 Comprehensive Conservation Plan.</i>
North Brigantine Natural Area	<u>Approved BMP</u> : New Jersey Division of Parks and Forestry's interim plan for the protection of seabeach amaranth, dated April 2008. <i>This plan is in need of updating.</i>
Brigantine City	<u>Approved BMP</u> : Dated November 2011.
Cape May County	
Ocean City	<u>Approved BMP</u> : Dated January 2016.
Corsons Inlet State Park	<u>Approved BMP</u> : New Jersey Division of Parks and Forestry's interim plan for the protection of seabeach amaranth, dated April 2008. <i>This plan is in need of updating.</i>

Jurisdiction	Protective Zones or Date of Approved BMP
Strathmere (Upper Township)	<u>Approved BMP</u> : Dated March 2011.
Sea Isle City	<u>Approved BMP</u> : Dated March 2011.
Avalon Borough	<u>Approved BMP</u> : Dated April 2009.
Stone Harbor Borough	<u>Approved BMP</u> : Including the Stone Harbor Point Conservation Plan, dated March 2008.
North Wildwood City	<u>Approved BMP</u> : Dated August 2009.
Cape May National Wildlife Refuge	<u>Protective Zone</u> : Two-Mile Beach Unit. <i>This is consistent with the approved 2004 Comprehensive Conservation Plan.</i>
U.S. Coast Guard Loran Support Unit	<u>Protective Zone</u> : Cape May National Wildlife Refuge boundary south to the Cape May Inlet jetty.
U.S. Coast Guard Training Center	<u>Approved BMP</u> : Integrated Natural Resource Management Plan, dated October 2017.
Cape May City	<u>Approved BMP</u> : Dated March 2008.
Cape May Point State Park	<u>Approved BMP</u> : New Jersey Division of Parks and Forestry's interim plan for the protection of seabeach amaranth, dated April 2008. <i>This plan is in need of updating.</i>
Cape May Point Borough	<u>Approved BMP</u> : Dated April 2016.

CLOSING REMARKS

The Service appreciates the cooperation of the DLUR in protecting seabeach amaranth in New Jersey. Please contact Wendy Walsh at (609) 382-5274 or wendy_walsh@fws.gov if you have any questions about the above recommendations or require further assistance.

Sincerely,



Eric Schrading
Field Supervisor

Enclosures (2)

email distribution list:

Subject: 2017-2018 seabeach amaranth protective zones

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Seabeach Amaranth New Jersey Totals

Site Name	2017	2016	2015	Average
Keansburg*	0	0	0	0
Port Monmouth	1	0	4	2
Sea Bright North	159	92	3	85
Sea Bright Central	4	3	0	2
Monmouth Beach North	7	27	13	16
Monmouth Beach Central	0	2	2	1
Monmouth Beach South	0	11	18	10
Seven Presidents Park	17	34	86	46
Long Branch	3	1	53	19
Ocean Grove (Neptune Twp)	67	2	0	23
Bradley Beach*	0	0	0	0
Avon-by-the-Sea	0	0	1	0
Belmar - South of Shark R. Inlet	2	1	0	1
Belmar Central	1	0	0	0
Spring Lake - North	3	2	0	2
Wreck Pond (Spring Lake and Sea Girt)	18	6	8	11
Sea Girt - Central	9	0	1	3
Sea Girt - National Guard	1	11	50	21
Manasquan*	0	0	0	0
Monmouth County Subtotal	292	192	239	241
Point Pleasant	219	3	0	74
Bayhead*	0	0	0	0
Mantoloking*	0	0	0	0
Brick Township*	0	0	0	0
Seaside Heights*	0	0	0	0
Island Beach State Park Northern Natural Area	5	4	1	3
Island Beach State Park Central Recreational Area*	0	0	0	0
Island Beach State Park Southern Natural Area	7	1	0	3
Barneget Light Borough	4	0	0	1
Long Beach Township	5	0	0	2
Harvey Cedars Borough	3	0	0	1
Ocean County Subtotal	243	8	1	84
North Brigantine Natural Area	2	1	0	1
Brigantine*	0	0	0	0
Atlantic City*	0	0	0	0
Seaview Harbor Marina (Longport)*	0	0	0	0
Atlantic County Subtotal	2	1	0	1
Ocean City	0	0	3	1
Corsons Inlet State Park - North	1	0	0	0
Corsons Inlet State Park - South*	0	0	0	0
Upper Township - Strathmere	1	0	0	0
Sea Isle City*	0	0	0	0
Avalon	0	1	0	0
Coast Guard Loran Support Unit*	0	0	0	0
Cape May Point State Park*	0	0	0	0
Cape May County Subtotal	2	1	3	2
Total Seabeach Amaranth Plants in New Jersey	539	202	243	328
(Excluding Federally Managed Conservation Lands)				
<i>*Listed sites with 0 plants in the past 3 years have a previous history of plants.</i>				

U.S. Fish and Wildlife Service Recommendations for Beach Management Plans: Precautionary Zones, Plant Protection Strips, and Red Knot Protections

The U.S. Fish and Wildlife Service (Service) works in partnership with the New Jersey Division of Fish and Wildlife's Endangered Nongame Species Program (ENSP) and local beach managers to develop and implement Beach Management Plans (Plans or BMPs).¹ The BMPs focus on plants and animals listed as endangered, threatened, or of special concern under Federal and/or State law. The Service encourages all beach management entities in New Jersey to develop a BMP. Plans are required for those New Jersey beaches that receive publicly-funded beach nourishment projects, such as projects carried out by the U.S. Army Corps of Engineers (Corps). Federal and State laws require beach management that is compatible with the needs of listed species, particularly on beaches maintained through publicly-funded projects. The responsibility for protecting listed species is shared among the Corps, the Service, the State, and local beach managers.

The BMPs address a wide range of issues such as symbolic fencing for protection and management of listed species, trash collection, beach raking, dune management, vehicles, and law enforcement. The issues addressed by Plans are generally consistent across the coast, but the specific provisions of each Plan are site-specific and developed cooperatively by local beach managers, the ENSP, and the Service. This document does not address all the issues that are covered by the BMPs. Instead, this document provides justifications and recommendations for three particular kinds of conservation practices that should be included in BMPs—Precautionary Zones, Plant Protection Strips, and Red Knot (*Calidris canutus rufa*) Protections. These recommendations supplement guidelines issued previously for listed beach species (U.S. Fish and Wildlife Service 1994, 1997, 2002, 2005) and are now being incorporated into BMPs with the goal of enhancing recovery.

Precautionary Zones

Precautionary Zones are areas that are not known to currently support federally or State-listed beach species, including piping plover (*Charadrius melodus*), but that are believed to be of sufficient quality habitat to support those species. The designation of a Precautionary Zone within a municipality will be made on a case-by-case basis using best professional judgment, but will be incorporated in most BMPs. Decisions regarding whether and where to establish precautionary zones within a municipality will be based on opportunities to maintain or promote suitable habitat, using the following criteria.

1. The presence of habitat features that promote use by listed species, such as the following:
 - areas with overwash, open connections to bayside foraging habitats, or at accreting ends of barrier islands;
 - gently sloped beaches (*i.e.*, lower foredunes and upper strands of non-eroding beaches);
 - the presence of salt pond intertidal “flats”;

¹ http://www.fws.gov/northeast/njfieldoffice/pdf/Beach_Manage_.pdf

- the presence of ephemeral pools;
 - a well-developed wrack line;
 - sparse vegetation; and
 - a more natural, less stabilized dune line.
2. Proximity to inlets: Proximity to inlets is of sufficient importance to federally and State-listed species that it is considered a criterion on its own. Inlet beaches often contain high-quality habitat for piping plovers and other beach-nesting birds because they typically have low wave energy, accreting sandflats, and a rich infaunal community providing good foraging opportunities. Research has shown that the majority of piping plover nests in New Jersey occur on inlet beaches, which are commonly greater than 150 meters wide and undeveloped (Maslo *et al.* 2011). Likewise, seabeach amaranth (*Amaranthus pumilis*) is primarily found near inlets (U.S. Fish and Wildlife Service 1996), and unimproved inlets are a preferred habitat for red knots (Harrington 2008; U.S. Fish and Wildlife Service 2014).
 3. Relatively low levels of potential disturbance from factors including, but not limited to, the following:
 - dogs;
 - recreational beachgoers;
 - kite flying;
 - driving on the beach;
 - fireworks;
 - predators; and
 - lifeguards, public works personnel, etc.
 4. The extent of available habitat (length and width of beach).
 5. The proximity to other areas with known use by federally and State-listed species (provides better opportunities for colonization to occur).
 6. Historical occurrence of federally and State-listed species (indicates that habitat was of sufficient quality and quantity to have been used in the past).

Plant Protection Strips

New Jersey's upper beaches (from the wrack line or high water mark to the dune or other landward limit, such as a boardwalk or bulkhead) support a number of listed beach plants including seabeach amaranth. Seabeach amaranth was extirpated from New Jersey in 1913 and remained absent from the State until its rediscovery in 2000 (U.S. Fish and Wildlife Service 2007). Following a period of geographic re-expansion in the 2000s, seabeach amaranth populations recently declined sharply. Range-wide, plant numbers declined more than 99% between 2002 and 2013. In New Jersey, seabeach amaranth counts from 2007 to 2014 were down more than 75% compared to the period from 2001 to 2006. Moreover, New Jersey's remaining plants are very concentrated, with more than 95% located in Sandy Hook. Thus, populations outside of Sandy Hook are at high risk of extirpation. In 2014, outside of Sandy

Hook, only 11 plants were observed in Monmouth County, 7 were observed in Ocean County, and none were found in Atlantic or Cape May Counties.

However, seabeach amaranth does have potential to recover in New Jersey. This species has a long-lived seedbank, with fresh seeds dispersed by wind and water (U.S. Fish and Wildlife Service 1996). These traits make seabeach amaranth an effective colonizer of suitable habitats when germination and plant development are not precluded by human activities. The primary human activities limiting the distribution of beach plants like seabeach amaranth are mechanical beach raking and off-road vehicle use (Kelly 2014). Thus, recovery of seabeach amaranth and other listed beach plants will likely be enhanced by limiting these activities in the upper beach areas where the plants occur.

The first generation of BMPs, which were approved from 2006 to 2011, generally provided plant protections incidental to those for beach-nesting birds. Indeed, areas set aside for beach-nesting birds do generally support rare beach plants as well, largely due to the exclusion of beach rakes and other vehicles. However, population declines in seabeach amaranth and other beach plants show that additional measures are necessary to conserve and restore these species. In particular, beach plants would likely benefit from “corridors” that can support seed exchange between protected areas. These corridors can also allow for recolonization of a protected area following storms or other events that result in a localized decline or extirpation.

Kelly (2015) found that recreational beach users (*e.g.*, swimmers, walkers, sunbathers, off-road vehicles) are concentrated lower on the beach profile (nearer the ocean), but are relatively sparse on the more landward portions of the upper beach. In fact, even during periods of peak beach use (*e.g.*, summer holidays), only 1% of beachgoers used the upper (landward) 20% of the beach, and 90% were present within the lower 60% of the beach. Thus, curtailment of raking and driving on the most landward portion of the upper beach will have minimal effect on the majority of beach users. Curtailment of beach raking in this area can also foster development of natural dune systems (Nordstrom *et al.* 2000, Cathcart and Melby 2009, Nordstrom *et al.* 2012), provide habitat to native pollinators like butterflies, result in cost-savings to beach managers, and diversify the range of recreational amenities available to beach-users (*i.e.*, some visitors enjoy experiencing a natural section of dry beach featuring native plants, shells, etc.). Based on the high value of the landward portion of upper beaches as dispersal corridors for rare plants and the low conflict with beach users in this zone, the Service recommends the following provisions be incorporated in all new and revised BMPs.

Within Protected Zones:

- Prohibit mechanical raking and scraping year-round, except as needed during a State of Emergency (SOE).
- Designate a “Plant Protection Strip,” consisting of approximately 25% of the total beach width, located immediately adjacent to the landward limit of the beach (*e.g.*, primary dune, boardwalk, bulkhead, etc.). Prohibit driving within the Plant Protection Strip year-round.
- Outside of the Plant Protection Strip, follow site-specific driving restrictions as specified in the BMP.

Within Precautionary Zones:

- Prohibit mechanical raking and scraping between March 15 and August 31, except as needed during an SOE. If no listed species are present by July 15, raking and scraping restrictions may be lifted, except within the Plant Protection Strip, as discussed below.
- Designate a Plant Protection Strip, consisting of approximately 25% of the total beach width, located immediately adjacent to the landward limit of the beach (e.g., primary dune, boardwalk, bulkhead, etc.). Eliminate driving and mechanical raking and scraping within the strip, preferably year round, but minimally from March 15 to November 30, except during an SOE.
- Outside of the Plant Protection Strip, follow site-specific driving restrictions as specified in the BMP.

Within Recreational Zones:

- Within each Recreational Zone, designate a “Plant Protection Strip,” consisting of approximately 10% of the total beach width, located immediately adjacent to the landward limit of the beach (e.g., primary dune, boardwalk, bulkhead, etc.). Eliminate driving and mechanical raking and scraping within the strip, preferentially year-round, but minimally from May 15 to November 30, except during an SOE.

For All Plant Protection Strips:

- Seasonally mark Plant Protection Strips with PVC posts and signs (but not rope or string). The Service can provide a limited number of signs.
- Conduct an annual meeting or training to educate beach rake and off-road vehicle operators about the need to stay out of the Plant Protection Strips.

Red Knot Protections

The rufa red knot breeds in the tundra of the central Canadian Arctic and winters primarily in the southern tip of South America, northern Brazil, the Caribbean, and the southeastern and Gulf coasts of the U.S. Some of these robin-sized shorebirds fly more than 9,300 miles from south to north every spring and reverse the trip every autumn. Migrating red knots can complete non-stop flights of 1,500 miles or more, converging on vital stopover areas to rest and refuel along the way. Large flocks arrive along the Delaware Bay and New Jersey’s Atlantic coast each spring (May through June), in time to coincide with the spawning season for the horseshoe crab (*Limulus polyphemus*). Horseshoe crab eggs provide a rich, easily digestible food source for migrating birds. Mussel beds on New Jersey’s southern Atlantic coast are also an important food source for migrating red knots.

Red knots show moderate fidelity to stopover locations during fall migration (mid-July through November). Key foraging and roosting areas along New Jersey’s Atlantic coast are located primarily at unstabilized inlets (e.g., Stone Harbor Point, North Brigantine Natural Area), but also include several continuous beaches (e.g., Avalon, North Wildwood, Stone Harbor north of the Point). Consistently used stopovers typically feature intertidal sand flats that become exposed on a falling tide; however, red knots may also use other New Jersey beaches on a less consistent basis. In addition, small numbers of red knots may spend all or part of the winter in New Jersey.

The rufa red knot was federally listed as threatened on January 12, 2015. Threats to the red knot include sea level rise; coastal development; shoreline stabilization; dredging; reduced food availability at stopover areas; disturbance by vehicles, people, dogs, aircraft, and boats; and climate change (U.S. Fish and Wildlife Service 2014). For more information, visit [<http://www.fws.gov/northeast/redknot/>](http://www.fws.gov/northeast/redknot/).

In developing each new or revised BMP, the Service will use the best available data regarding red knot use in that municipality or jurisdiction and make conservation recommendations accordingly. In areas where documented red knot use is minimal (*e.g.*, only a few birds over the past 10 years), the Service will recommend only minimal conservation measures, such as educating beach management staff to avoid direct lines of travel through shorebird flocks. In areas of moderate or high red knot use, the Service may recommend additional conservation measures to manage habitat, predation and/or disturbance. Where red knot use areas overlap with habitat used by beach-nesting birds, few additional protections are likely to be necessary during the nesting season, but some measures may need to be extended through part or all of the fall months. All red knot conservation measures included in a final BMP will be developed cooperatively between the Service, ENSP, and the local beach managers, and will be tailored to site-specific conditions.

Conclusion

Along with previously issued guidelines for managing fireworks and other recreational activities (U.S. Fish and Wildlife Service 1994, 1997), the Service expects the measures outlined above will provide necessary protections to aid recovery of listed beach species. The Service looks forward to continued coordination with local beach managers to accommodate recreational beach uses while also promoting stewardship of federally and State-listed endangered and threatened beach-dependent birds and plants.

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2018 Seabeach Amaranth Protective Zone **Please Reply Confirming Receipt**

Galbreath, Dana <Dana.Galbreath@dep.nj.gov>

Tue 4/10/2018 10:59 AM

To: Stephen Reid <sreid@pointbeach.org>;

Importance: High

📎 1 attachments (3 MB)

2018-TA-0081 seabeach amaranth.pdf;

Dear Mayor Reid,

According to N.J.A.C. 7:7-10.2(b)7, the Division of Land Use Regulation, in conjunction with the United States Fish and Wildlife service, has determined that the attached 2018 Seabeach Amaranth Protective Zone list (for Fall 2017 through Fall 2018) includes areas for which you potentially conduct beach and dune maintenance activities pursuant to a coastal general or individual permit.

This is to advise you that the federally listed (threatened) and state listed (endangered) plant Seabeach Amaranth (*Amaranthus pumilus*) has become reestablished on certain New Jersey beaches, and it may be adversely impacted by unauthorized beach and dune maintenance activities. Pursuant to the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) (ESA) the U.S. Fish and Wildlife Service has delineated Seabeach Amaranth Protective Zones, and these zones are detailed on the attached list.

Please be advised that the U.S. Fish and Wildlife Service requires the following management actions within the protective zones to avoid adverse impact to the species. **Please review this information and be advised of these required conditions of your coastal beach and dune maintenance permits for the Seabeach Amaranth protective zone on your beach.**

1. Beach raking is prohibited from the landward limit of the beach berm (i.e., dune, seawall, bulkhead, boardwalk, commercial/residential structure) to the mean high water line from May 15 to November 30.
2. Sand scraping or other mechanical manipulation of the beach is prohibited year round.
3. Vehicle use is restricted to essential (non-routine) and emergency service vehicles within the designated protective zone from the landward limit of the beach to the Mean High Water line between May 15 and November 30.
4. In areas of high pedestrian traffic, string and post symbolic fencing shall be erected to route people away from the protective zones. The service may be contacted for site specific fencing recommendations.
5. Limit vegetation planting and sand fencing to dune areas, allowing the upper beach to remain unstabilized and sparsely vegetated. Use only native species of vegetation, in accordance

with N.J.A.C.7:7-10.4(c).

6. If a particular beach area is not identified on the protective zone list as described above, but is subsequently found to contain a threatened or endangered beach plant, the Department shall notify you and the management actions 1 through 5 above shall be followed at the newly identified area.

Be advised that the areas inhabited by Seabeach Amaranth are often the same areas used by the threatened or endangered beach nesting shorebirds. However, the above recommendations do not satisfy other restrictions or replace ongoing management activities for the protection of beach-nesting birds.

It should be noted that if you do NOT have a current permit for beach and dune management activities, NO beach and dune maintenance activities (as defined at N.J.A.C. 7:7, Subchapter 10) may take place anywhere on your beach.

Should you have any questions concerning the areas of documented habitat, or other issues related to endangered or threatened plant species, please contact Wendy Walsh of the U.S. Fish and Wildlife Service at (609) 382-5274. Any questions concerning your need to obtain a coastal general permit or this letter should be directed to below signed at (609) 633-2289.

Sincerely,

Dana Galbreath
NJ DEP Division of Land Use Regulation
Mail Code: 501-02A
P.O Box 420
Trenton, NJ 08625
609-777-4191



In Reply Refer To:
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United States Department of the Interior

FISH AND WILDLIFE SERVICE

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Diane Dow, Director
Division of Land Use Regulation
New Jersey Department of Environmental Protection
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ATTN: Colleen Keller

OCT 24 2017

Dear Ms. Dow:

This letter transmits the U.S. Fish and Wildlife Service's (Service) recommendations for protection of the federally listed (threatened) plant seabeach amaranth (*Amaranthus pumilus*) on Atlantic coastal beaches within New Jersey for fall 2017 through fall 2018. This letter is provided as technical assistance pursuant to the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

RECOMMENDED PROTECTIVE MEASURES

The Service recommends managing the areas indicated below (protective zones) for the protection of seabeach amaranth over the next 12 months. The delineation of the protective zones was based upon the distribution of plants during the 2015 to 2017 growing seasons. Areas where no plants have been observed since 2014 are no longer listed as protective zones. The protective zones remain similar to those recommended in past years, with a few key changes.

The distribution of plants will likely shift annually; therefore, the Service will revise the recommended protective zones each fall based on the plant's known distribution in previous years. Beach managers and Coastal Area Facility Review Act (N.J.S.A. 13:19-1 *et seq.*) (CAFRA) permittees should be advised that the seabeach amaranth growing season is from May 15 to November 30; however, plants may not be evident on the beach until July. The Service may be contacted with any questions regarding seabeach amaranth and its protection, or to report a new occurrence of the plant outside established protective zones. The Service recommends the following management actions within protective zones.

- **Prohibit beach raking** from the landward limit of the beach berm (*i.e.*, dune, sea wall, bulkhead, boardwalk, commercial/residential structure) to the mean high-water line from May 15 to November 30. This prohibition should be reflected in CAFRA permits from the New Jersey Division of Land Use Regulation (DLUR). Applicants requesting a waiver from permit conditions regarding the length or width of a "no

rake” zone should contact the Service to arrange a site visit, and should be prepared to propose additional areas of suitable habitat elsewhere within the same municipality that will be managed for seabeach amaranth.

- ***Prohibit sand scraping*** (i.e., bulldozing) year round. This prohibition should be reflected in CAFRA permits from the DLUR.
- ***Restrict vehicle use*** to only essential (non-routine) and emergency services, and to the area below the mean high-water line. These restriction should be implemented from May 15 to November 30.
- ***Route people away from protective zones***, in areas of high pedestrian traffic, using string-and-post symbolic fencing. The Service may be contacted for site-specific fencing recommendations.
- ***Limit vegetation planting and sand fencing*** to dune areas, allowing the upper beach to remain unstabilized and sparsely vegetated. Use only native species of vegetation for any planting in accordance with N.J.A.C. 7:7E-3A.4.
- ***Coordinate surveys and monitoring with the Service.***

The above recommendations do not satisfy other restrictions or replace ongoing management activities for the protection of beach-nesting birds. The enclosed table gives plant numbers by municipality or other local jurisdiction. Beach managers can contact the Service for locational details.

In many areas, noted in the table below, the Service, the New Jersey Division of Fish and Wildlife, and local land managers have jointly approved a Beach Management Plan (BMP). Where an approved BMP is in place, the Service recommends that the conditions of any CAFRA permit require adherence to the provisions of the approved BMP, instead of reliance on shifting protective zones. Beach managers should note that some approved BMPs call for curtailment of beach raking and other activities based on occurrence of listed species even in designated “recreational zones,” and other BMP provisions to protect seabeach amaranth apply even if no plants have been observed in recent years. Beach managers should also note that, starting in 2016, the Service began asking for designation of shore-parallel, back-beach “plant protection strips” in all new and revised BMPs; see enclosed information.

PROTECTIVE ZONES AND BEACH MANAGEMENT PLANS

Protective zones and approved BMPs are listed below by county and municipality.

Jurisdiction	Protective Zones or Date of Approved BMP
Monmouth County	
Port Monmouth	Protective Zone: Bayshore Waterfront Park, beginning 400 feet south of the jetty (Pews Creek Inlet) and extending 1,400 feet east.

Jurisdiction	Protective Zones or Date of Approved BMP
Gateway National Recreation Area - Sandy Hook Unit	<u>Protective Zone:</u> The entire ocean-front beach outside of designated recreational centers, including the U.S. Coast Guard Station. <i>This is consistent with the approved 2009 Shoreside Threatened and Endangered Species Beach Management Plan, which is in need of updating.</i>
Sea Bright Borough	<u>Approved BMP:</u> Dated September 2015.
Monmouth Beach Borough	<u>Approved BMP:</u> Dated September 2015.
Seven Presidents Oceanfront Park	<u>Approved BMP:</u> Dated April 2016.
Long Branch City	<u>Approved BMP:</u> Dated May 2016.
Ocean Grove (Neptune Township)	<u>Protective Zone:</u> From the pier at Webb Avenue south to the Bradley Beach border. <i>The Service appreciates the cooperation of Ocean Grove in managing seabeach amaranth during the 2017 growing season. We recommend continuation of similar management provisions during the 2018 growing season. There should be no beach bulldozing in the protective zone even outside of the growing season, to avoid burial of the seedbank.</i>
Bradley Beach Borough	<u>Protective Zone:</u> From the Ocean Grove border extending south 200 feet.
Avon-by-the-Sea	<u>Protective Zone:</u> From the pavilion south of Norwood Avenue to Sylvania Avenue.
Belmar Borough	<u>Protective Zone:</u> Shark River Inlet jetty to the pier at First Avenue. <u>Protective Zone:</u> Second Avenue to Fifth Avenue. <u>Protective Zone:</u> North Boulevard south to the Spring Lake border.
Spring Lake Borough	<u>Protective Zone:</u> From the Belmar border south to Pitney Avenue. <u>Protective Zone:</u> From the southern end of the boardwalk to the Sea Girt Borough border. <i>The Service appreciates the cooperation of Spring Lake in managing seabeach amaranth during the 2017 growing season. We recommend continuation of similar management provisions during the 2018 growing season. There should be no beach bulldozing in the protective zone even outside of the growing season, to avoid burial of the seedbank.</i>
Sea Girt Borough	<u>Protective Zone:</u> From the Spring Lake border to Beacon Boulevard. <i>In this protective zone, permits should require Sea Girt to follow the June 2010 Settlement Agreement among the Borough of Sea Girt, the United States Fish and Wildlife Service, and the New Jersey Department of Environmental Protection (i.e., within the areas identified in the Agreement as "North Beach" and "Pavilion Beach").</i> <u>Protective Zone:</u> From New York Boulevard to Seaside Place. <i>Unless the 2010 Settlement Agreement is updated and converted to a BMP, the Service recommends that conditions of any permit issued for activities on Sea Girt beaches over the next year include the additional protective zone listed above.</i>

Jurisdiction	Protective Zones or Date of Approved BMP
Sea Girt National Guard Training Center	<u>Approved BMP</u> : Integrated Natural Resources Management Plan, dated March 2013.
Ocean County	
Point Pleasant Beach Borough	<u>Protective Zone</u> : From New Jersey Avenue to Philadelphia Avenue. <i>The above-listed protective zone supported 219 seabeach amaranth plants in 2017, or 40 percent of the Statewide total outside of Sandy Hook. This area is a high conservation priority, and includes two privately owned parcels—Block 46.02, Lot 3 (Risden's Beach Corp.) and Block 29.02, Lot 1 (Point Pleasant Beach Surf Club).</i>
Island Beach State Park	<u>Protective Zone</u> : From Elizabeth Avenue to Michele Lane. <u>Approved BMP</u> : Dated February 2017.
Barnegat Light Borough	<u>Protective Zone</u> : The inlet and ocean front beach from the jetty south to East 5 th Street (south and east to approximately 39.757375, -74.096796). <u>Protective Zone</u> : East 20 th Street to East 22 nd Street. <u>Protective Zone</u> : East 24 th Street to East 29 th Street.
Long Beach Township	<u>Protective Zone</u> : Seaview Drive South to Sandy Cove Lane. <u>Protective Zone</u> : Panorama Drive South to Windrift Lane. <u>Protective Zone</u> : 300 feet north and south of 39.714792, -74.128037. <u>Protective Zone</u> : Emile Lane to Poseidon Lane.
Harvey Cedars Borough	<u>Approved BMP</u> : Dated January 2010. <u>Protective Zone</u> : Mercer Avenue to East Atlantic Avenue. <u>Protective Zone</u> : East Union Avenue to James Street. <i>Unless the 2010 BMP is updated, the Service recommends that conditions of any permit issued for activities on Harvey Cedars beaches over the next year include the protective zones listed above.</i>
Surf City	<u>Approved BMP</u> : Dated January 2011.
Edwin B. Forsythe National Wildlife Refuge	<u>Protective Zone</u> : Holgate Unit. <i>This is consistent with the approved 2004 Comprehensive Conservation Plan.</i>
Atlantic County	
Edwin B. Forsythe National Wildlife Refuge	<u>Protective Zone</u> : Little Beach Unit. <i>This is consistent with the approved 2004 Comprehensive Conservation Plan.</i>
North Brigantine Natural Area	<u>Approved BMP</u> : New Jersey Division of Parks and Forestry's interim plan for the protection of seabeach amaranth, dated April 2008. <i>This plan is in need of updating.</i>
Brigantine City	<u>Approved BMP</u> : Dated November 2011.
Cape May County	
Ocean City	<u>Approved BMP</u> : Dated January 2016.
Corsons Inlet State Park	<u>Approved BMP</u> : New Jersey Division of Parks and Forestry's interim plan for the protection of seabeach amaranth, dated April 2008. <i>This plan is in need of updating.</i>

Jurisdiction	Protective Zones or Date of Approved BMP
Strathmere (Upper Township)	<u>Approved BMP</u> : Dated March 2011.
Sea Isle City	<u>Approved BMP</u> : Dated March 2011.
Avalon Borough	<u>Approved BMP</u> : Dated April 2009.
Stone Harbor Borough	<u>Approved BMP</u> : Including the Stone Harbor Point Conservation Plan, dated March 2008.
North Wildwood City	<u>Approved BMP</u> : Dated August 2009.
Cape May National Wildlife Refuge	<u>Protective Zone</u> : Two-Mile Beach Unit. <i>This is consistent with the approved 2004 Comprehensive Conservation Plan.</i>
U.S. Coast Guard Loran Support Unit	<u>Protective Zone</u> : Cape May National Wildlife Refuge boundary south to the Cape May Inlet jetty.
U.S. Coast Guard Training Center	<u>Approved BMP</u> : Integrated Natural Resource Management Plan, dated October 2017.
Cape May City	<u>Approved BMP</u> : Dated March 2008.
Cape May Point State Park	<u>Approved BMP</u> : New Jersey Division of Parks and Forestry's interim plan for the protection of seabeach amaranth, dated April 2008. <i>This plan is in need of updating.</i>
Cape May Point Borough	<u>Approved BMP</u> : Dated April 2016.

CLOSING REMARKS

The Service appreciates the cooperation of the DLUR in protecting seabeach amaranth in New Jersey. Please contact Wendy Walsh at (609) 382-5274 or wendy_walsh@fws.gov if you have any questions about the above recommendations or require further assistance.

Sincerely,



Eric Schrading
Field Supervisor

Enclosures (2)

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Subject: 2017-2018 seabeach amaranth protective zones

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Seabeach Amaranth New Jersey Totals

Site Name	2017	2016	2015	Average
Keansburg*	0	0	0	0
Port Monmouth	1	0	4	2
Sea Bright North	159	92	3	85
Sea Bright Central	4	3	0	2
Monmouth Beach North	7	27	13	16
Monmouth Beach Central	0	2	2	1
Monmouth Beach South	0	11	18	10
Seven Presidents Park	17	34	86	46
Long Branch	3	1	53	19
Ocean Grove (Neptune Twp)	67	2	0	23
Bradley Beach*	0	0	0	0
Avon-by-the-Sea	0	0	1	0
Belmar - South of Shark R. Inlet	2	1	0	1
Belmar Central	1	0	0	0
Spring Lake - North	3	2	0	2
Wreck Pond (Spring Lake and Sea Girt)	18	6	8	11
Sea Girt - Central	9	0	1	3
Sea Girt - National Guard	1	11	50	21
Manasquan*	0	0	0	0
Monmouth County Subtotal	292	192	239	241
Point Pleasant	219	3	0	74
Bayhead*	0	0	0	0
Mantoloking*	0	0	0	0
Brick Township*	0	0	0	0
Seaside Heights*	0	0	0	0
Island Beach State Park Northern Natural Area	5	4	1	3
Island Beach State Park Central Recreational Area*	0	0	0	0
Island Beach State Park Southern Natural Area	7	1	0	3
Barneget Light Borough	4	0	0	1
Long Beach Township	5	0	0	2
Harvey Cedars Borough	3	0	0	1
Ocean County Subtotal	243	8	1	84
North Brigantine Natural Area	2	1	0	1
Brigantine*	0	0	0	0
Atlantic City*	0	0	0	0
Seaview Harbor Marina (Longport)*	0	0	0	0
Atlantic County Subtotal	2	1	0	1
Ocean City	0	0	3	1
Corsons Inlet State Park - North	1	0	0	0
Corsons Inlet State Park - South*	0	0	0	0
Upper Township - Strathmere	1	0	0	0
Sea Isle City*	0	0	0	0
Avalon	0	1	0	0
Coast Guard Loran Support Unit*	0	0	0	0
Cape May Point State Park*	0	0	0	0
Cape May County Subtotal	2	1	3	2
Total Seabeach Amaranth Plants in New Jersey	539	202	243	328
(Excluding Federally Managed Conservation Lands)				
<i>*Listed sites with 0 plants in the past 3 years have a previous history of plants.</i>				

U.S. Fish and Wildlife Service Recommendations for Beach Management Plans: Precautionary Zones, Plant Protection Strips, and Red Knot Protections

The U.S. Fish and Wildlife Service (Service) works in partnership with the New Jersey Division of Fish and Wildlife's Endangered Nongame Species Program (ENSP) and local beach managers to develop and implement Beach Management Plans (Plans or BMPs).¹ The BMPs focus on plants and animals listed as endangered, threatened, or of special concern under Federal and/or State law. The Service encourages all beach management entities in New Jersey to develop a BMP. Plans are required for those New Jersey beaches that receive publicly-funded beach nourishment projects, such as projects carried out by the U.S. Army Corps of Engineers (Corps). Federal and State laws require beach management that is compatible with the needs of listed species, particularly on beaches maintained through publicly-funded projects. The responsibility for protecting listed species is shared among the Corps, the Service, the State, and local beach managers.

The BMPs address a wide range of issues such as symbolic fencing for protection and management of listed species, trash collection, beach raking, dune management, vehicles, and law enforcement. The issues addressed by Plans are generally consistent across the coast, but the specific provisions of each Plan are site-specific and developed cooperatively by local beach managers, the ENSP, and the Service. This document does not address all the issues that are covered by the BMPs. Instead, this document provides justifications and recommendations for three particular kinds of conservation practices that should be included in BMPs—Precautionary Zones, Plant Protection Strips, and Red Knot (*Calidris canutus rufa*) Protections. These recommendations supplement guidelines issued previously for listed beach species (U.S. Fish and Wildlife Service 1994, 1997, 2002, 2005) and are now being incorporated into BMPs with the goal of enhancing recovery.

Precautionary Zones

Precautionary Zones are areas that are not known to currently support federally or State-listed beach species, including piping plover (*Charadrius melodus*), but that are believed to be of sufficient quality habitat to support those species. The designation of a Precautionary Zone within a municipality will be made on a case-by-case basis using best professional judgment, but will be incorporated in most BMPs. Decisions regarding whether and where to establish precautionary zones within a municipality will be based on opportunities to maintain or promote suitable habitat, using the following criteria.

1. The presence of habitat features that promote use by listed species, such as the following:
 - areas with overwash, open connections to bayside foraging habitats, or at accreting ends of barrier islands;
 - gently sloped beaches (*i.e.*, lower foredunes and upper strands of non-eroding beaches);
 - the presence of salt pond intertidal “flats”;

¹ http://www.fws.gov/northeast/njfieldoffice/pdf/Beach_Manage_.pdf

- the presence of ephemeral pools;
 - a well-developed wrack line;
 - sparse vegetation; and
 - a more natural, less stabilized dune line.
2. Proximity to inlets: Proximity to inlets is of sufficient importance to federally and State-listed species that it is considered a criterion on its own. Inlet beaches often contain high-quality habitat for piping plovers and other beach-nesting birds because they typically have low wave energy, accreting sandflats, and a rich infaunal community providing good foraging opportunities. Research has shown that the majority of piping plover nests in New Jersey occur on inlet beaches, which are commonly greater than 150 meters wide and undeveloped (Maslo *et al.* 2011). Likewise, seabeach amaranth (*Amaranthus pumilis*) is primarily found near inlets (U.S. Fish and Wildlife Service 1996), and unimproved inlets are a preferred habitat for red knots (Harrington 2008; U.S. Fish and Wildlife Service 2014).
 3. Relatively low levels of potential disturbance from factors including, but not limited to, the following:
 - dogs;
 - recreational beachgoers;
 - kite flying;
 - driving on the beach;
 - fireworks;
 - predators; and
 - lifeguards, public works personnel, etc.
 4. The extent of available habitat (length and width of beach).
 5. The proximity to other areas with known use by federally and State-listed species (provides better opportunities for colonization to occur).
 6. Historical occurrence of federally and State-listed species (indicates that habitat was of sufficient quality and quantity to have been used in the past).

Plant Protection Strips

New Jersey's upper beaches (from the wrack line or high water mark to the dune or other landward limit, such as a boardwalk or bulkhead) support a number of listed beach plants including seabeach amaranth. Seabeach amaranth was extirpated from New Jersey in 1913 and remained absent from the State until its rediscovery in 2000 (U.S. Fish and Wildlife Service 2007). Following a period of geographic re-expansion in the 2000s, seabeach amaranth populations recently declined sharply. Range-wide, plant numbers declined more than 99% between 2002 and 2013. In New Jersey, seabeach amaranth counts from 2007 to 2014 were down more than 75% compared to the period from 2001 to 2006. Moreover, New Jersey's remaining plants are very concentrated, with more than 95% located in Sandy Hook. Thus, populations outside of Sandy Hook are at high risk of extirpation. In 2014, outside of Sandy

Hook, only 11 plants were observed in Monmouth County, 7 were observed in Ocean County, and none were found in Atlantic or Cape May Counties.

However, seabeach amaranth does have potential to recover in New Jersey. This species has a long-lived seedbank, with fresh seeds dispersed by wind and water (U.S. Fish and Wildlife Service 1996). These traits make seabeach amaranth an effective colonizer of suitable habitats when germination and plant development are not precluded by human activities. The primary human activities limiting the distribution of beach plants like seabeach amaranth are mechanical beach raking and off-road vehicle use (Kelly 2014). Thus, recovery of seabeach amaranth and other listed beach plants will likely be enhanced by limiting these activities in the upper beach areas where the plants occur.

The first generation of BMPs, which were approved from 2006 to 2011, generally provided plant protections incidental to those for beach-nesting birds. Indeed, areas set aside for beach-nesting birds do generally support rare beach plants as well, largely due to the exclusion of beach rakes and other vehicles. However, population declines in seabeach amaranth and other beach plants show that additional measures are necessary to conserve and restore these species. In particular, beach plants would likely benefit from “corridors” that can support seed exchange between protected areas. These corridors can also allow for recolonization of a protected area following storms or other events that result in a localized decline or extirpation.

Kelly (2015) found that recreational beach users (*e.g.*, swimmers, walkers, sunbathers, off-road vehicles) are concentrated lower on the beach profile (nearer the ocean), but are relatively sparse on the more landward portions of the upper beach. In fact, even during periods of peak beach use (*e.g.*, summer holidays), only 1% of beachgoers used the upper (landward) 20% of the beach, and 90% were present within the lower 60% of the beach. Thus, curtailment of raking and driving on the most landward portion of the upper beach will have minimal effect on the majority of beach users. Curtailment of beach raking in this area can also foster development of natural dune systems (Nordstrom *et al.* 2000, Cathcart and Melby 2009, Nordstrom *et al.* 2012), provide habitat to native pollinators like butterflies, result in cost-savings to beach managers, and diversify the range of recreational amenities available to beach-users (*i.e.*, some visitors enjoy experiencing a natural section of dry beach featuring native plants, shells, etc.). Based on the high value of the landward portion of upper beaches as dispersal corridors for rare plants and the low conflict with beach users in this zone, the Service recommends the following provisions be incorporated in all new and revised BMPs.

Within Protected Zones:

- Prohibit mechanical raking and scraping year-round, except as needed during a State of Emergency (SOE).
- Designate a “Plant Protection Strip,” consisting of approximately 25% of the total beach width, located immediately adjacent to the landward limit of the beach (*e.g.*, primary dune, boardwalk, bulkhead, etc.). Prohibit driving within the Plant Protection Strip year-round.
- Outside of the Plant Protection Strip, follow site-specific driving restrictions as specified in the BMP.

Within Precautionary Zones:

- Prohibit mechanical raking and scraping between March 15 and August 31, except as needed during an SOE. If no listed species are present by July 15, raking and scraping restrictions may be lifted, except within the Plant Protection Strip, as discussed below.
- Designate a Plant Protection Strip, consisting of approximately 25% of the total beach width, located immediately adjacent to the landward limit of the beach (*e.g.*, primary dune, boardwalk, bulkhead, etc.). Eliminate driving and mechanical raking and scraping within the strip, preferably year round, but minimally from March 15 to November 30, except during an SOE.
- Outside of the Plant Protection Strip, follow site-specific driving restrictions as specified in the BMP.

Within Recreational Zones:

- Within each Recreational Zone, designate a “Plant Protection Strip,” consisting of approximately 10% of the total beach width, located immediately adjacent to the landward limit of the beach (*e.g.*, primary dune, boardwalk, bulkhead, etc.). Eliminate driving and mechanical raking and scraping within the strip, preferentially year-round, but minimally from May 15 to November 30, except during an SOE.

For All Plant Protection Strips:

- Seasonally mark Plant Protection Strips with PVC posts and signs (but not rope or string). The Service can provide a limited number of signs.
- Conduct an annual meeting or training to educate beach rake and off-road vehicle operators about the need to stay out of the Plant Protection Strips.

Red Knot Protections

The rufa red knot breeds in the tundra of the central Canadian Arctic and winters primarily in the southern tip of South America, northern Brazil, the Caribbean, and the southeastern and Gulf coasts of the U.S. Some of these robin-sized shorebirds fly more than 9,300 miles from south to north every spring and reverse the trip every autumn. Migrating red knots can complete non-stop flights of 1,500 miles or more, converging on vital stopover areas to rest and refuel along the way. Large flocks arrive along the Delaware Bay and New Jersey’s Atlantic coast each spring (May through June), in time to coincide with the spawning season for the horseshoe crab (*Limulus polyphemus*). Horseshoe crab eggs provide a rich, easily digestible food source for migrating birds. Mussel beds on New Jersey’s southern Atlantic coast are also an important food source for migrating red knots.

Red knots show moderate fidelity to stopover locations during fall migration (mid-July through November). Key foraging and roosting areas along New Jersey’s Atlantic coast are located primarily at unstabilized inlets (*e.g.*, Stone Harbor Point, North Brigantine Natural Area), but also include several continuous beaches (*e.g.*, Avalon, North Wildwood, Stone Harbor north of the Point). Consistently used stopovers typically feature intertidal sand flats that become exposed on a falling tide; however, red knots may also use other New Jersey beaches on a less consistent basis. In addition, small numbers of red knots may spend all or part of the winter in New Jersey.

The rufa red knot was federally listed as threatened on January 12, 2015. Threats to the red knot include sea level rise; coastal development; shoreline stabilization; dredging; reduced food availability at stopover areas; disturbance by vehicles, people, dogs, aircraft, and boats; and climate change (U.S. Fish and Wildlife Service 2014). For more information, visit [<http://www.fws.gov/northeast/redknot/>](http://www.fws.gov/northeast/redknot/).

In developing each new or revised BMP, the Service will use the best available data regarding red knot use in that municipality or jurisdiction and make conservation recommendations accordingly. In areas where documented red knot use is minimal (*e.g.*, only a few birds over the past 10 years), the Service will recommend only minimal conservation measures, such as educating beach management staff to avoid direct lines of travel through shorebird flocks. In areas of moderate or high red knot use, the Service may recommend additional conservation measures to manage habitat, predation and/or disturbance. Where red knot use areas overlap with habitat used by beach-nesting birds, few additional protections are likely to be necessary during the nesting season, but some measures may need to be extended through part or all of the fall months. All red knot conservation measures included in a final BMP will be developed cooperatively between the Service, ENSP, and the local beach managers, and will be tailored to site-specific conditions.

Conclusion

Along with previously issued guidelines for managing fireworks and other recreational activities (U.S. Fish and Wildlife Service 1994, 1997), the Service expects the measures outlined above will provide necessary protections to aid recovery of listed beach species. The Service looks forward to continued coordination with local beach managers to accommodate recreational beach uses while also promoting stewardship of federally and State-listed endangered and threatened beach-dependent birds and plants.

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http://www.fws.gov/northeast/redknot/pdf/20141125_REKN_FL_supplemental_doc_FINAL.pdf

Fwd: New folks at risden's south

Bob Santanello <bsantanello@comcast.net>

Fri 3/23/2018 10:46 AM

To: Stephen Reid <sreid@pointbeach.org>; Kevin Riordan <kbriaw@comcast.net>; Christine Riehl <CrieHl@pointbeach.org>;

FYI

Begin forwarded message:

Resent-From: <bsantanello@pointbeach.org>

From: Joe Servello [REDACTED]

Date: March 23, 2018 at 11:39:14 AM EDT

To: <bsantanello@pointbeach.org>

Subject: Re: New folks at risden's south

Bob

Follow-up to this.....

Beth was actually able to contact Curt. He apologized for the inconvenience and promised to cut a check for 14 people (I know, I'll believe it when I see it). Do you want me to let you know if that happens?

joe

On 3/22/18, 7:15 PM, "Joe Servello"

<[REDACTED]> wrote:

Bob

Been a while. Hope all is well.

My wife read on facebook that White Caps is no longer

running Riden's South café and lockers. The new guys in town are Food Shack.

I'm sure this was approved by the council. Did anyone take into account the fact that some people (myself included), at the end of the 2017 season, prepaid for the use of the lockers for 2018?

We asked the people from the Food Shack about this and their response was we have to get with the recent proprietors. I would think that the transition from one ownership to the other would include any previous prepaid transactions/obligations.

Let me know if there's been any resolution to that.

thanks

Joe

USACE Beachfill partner meeting

Raymond Savacool <RSavacool@tandmassociates.com>

Tue 2/20/2018 1:11 PM

To: Stephen Reid <sreid@pointbeach.org>; Christine Riehl <Criehl@pointbeach.org>;

Cc: Eileen Farrell <EFarrell@pointbeach.org>;

Meeting was today to discuss timeframes and schedule. There have been changes from last month.

Sea beach Amaranth which is a listed federally threatened/endangered plant was found on Ridsen's Beach and Point Beach Surf Club. The Corps will have to wait to see if it comes up and mitigate for the project. It does not mean that Point Beach north to Ridsen's won't get built but could be delayed until October. The schedule has therefore been altered to go to Bay Head in June before Point Beach and the southern end of Point Beach is now anticipated to start in August.

<https://www.fws.gov/northeast/njfieldoffice/endangered/amaranth.html>



RAYMOND SAVACOOOL, PE, PP, CME, CFM
GROUP MANAGER

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RSAVACOOOL@TANDMASSOCIATES.COM | TANDMASSOCIATES.COM



FW: seabeach amaranth

Peter Ritchings - EMG <pritchings@emg-environmental.com>

Mon 2/12/2018 4:20 PM

To: Stephen Reid <sreid@pointbeach.org>;

Cc: Christine Riehl <Criehl@pointbeach.org>; Patricia Kile <pkile@pointbeach.org>; pmkanitra@hotmail.com <pmkanitra@hotmail.com>;

📎 1 attachments (8 MB)

2018-TA-0246 Point Pleasant.PDF;

I spoke by telephone with Wendy Walsh of US Fish and Wildlife Service this afternoon regarding Seabeach Amaranth a Federally listed, threatened plant, present in Point Pleasant Beach. Last year there was a pretty healthy population of about 219 individual plants in around the South end of Ridsen's Beach and New York Ave.

The U.S. Fish and Wildlife service would like to have a meeting with municipal officials, the property owners and some other primarily governmental agency representatives to discuss some simple measures that can be potentially employed to protect and preserve the population of this Federally threatened plant.

In an effort to schedule this meeting, in the email below, Wendy Walsh included a link to doodle poll, which apparently is a scheduling program. Wendy asked that those persons that may wish to participate in a meeting indicate their availability.

Regards,

Peter Ritchings
President
Environmental Management Group, Inc.
1705 Bay Avenue-Suite 6
Point Pleasant, N.J. 08742
732 282-2222

From: Walsh, Wendy [mailto:wendy_walsh@fws.gov]
Sent: Monday, February 12, 2018 12:22 PM
To: Peter Ritchings - EMG
Subject: Fwd: seabeach amaranth

Hi Pete-

Thanks so much for the call today. I look forward to meeting with the landowners, the Borough, the Environmental Commission, and others to discuss seabeach amaranth management -- mainly at the end of New York Avenue in 2018, but also with an eye on the bigger picture will come into play through a Beach Management Plan.

Here's the doodle poll for folks to fill out and help us find a time that works. I'll share this same link with folks on my end.

<https://doodle.com/poll/ksyvdp9q3sa3nf3e>

Thanks again.
Wendy

----- Forwarded message -----

From: **Walsh, Wendy** <wendy_walsh@fws.gov>

Date: Mon, Feb 12, 2018 at 11:43 AM

Subject: seabeach amaranth

To: pritchings@emg-environmental.com

~~~~~  
Wendy Walsh, Endangered Species Biologist  
U.S. Fish and Wildlife Service, New Jersey Field Office  
4 E. Jimmie Leeds Road  
Galloway, New Jersey 08205  
phone: (609) 382-5274 fax: (609) 646-0352  
[wendy\\_walsh@fws.gov](mailto:wendy_walsh@fws.gov)  
[NJFO\\_ProjectReview@fws.gov](mailto:NJFO_ProjectReview@fws.gov) for new project reviews



In Reply Refer To:  
2018-TA-0246

## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

New Jersey Field Office  
4 E. Jimmie Leeds Road, Suite 4  
Galloway, New Jersey 08205  
Tel: 609/646 9310  
[www.fws.gov/northeast/njfieldoffice/](http://www.fws.gov/northeast/njfieldoffice/)



NOV 17 2017

Risden's Beach Corp  
P.O. Box 1052  
Point Pleasant Beach, New Jersey 08742

Mayor Stephen D. Reid  
416 New Jersey Avenue  
Point Pleasant Beach, New Jersey 08742

Point Pleasant Beach Surf Club  
c/o Ogden, P.O. Box 1754  
Point Pleasant Beach, New Jersey 08742

Jenkinson's Aquarium  
300 Ocean Avenue  
Point Pleasant Beach, New Jersey 08742

Dear Sirs or Madams:

The U.S. Fish and Wildlife Service (Service) is writing to request your assistance in the protection of the federally listed (threatened) plant seabeach amaranth (*Amaranthus pumilus*) on your beaches. In August 2017, approximately 219 seabeach amaranth plants were documented at the end of New York Avenue in Point Pleasant Beach Borough, Ocean County, New Jersey. The plants were located on two properties: Block 46.02, Lot 3 (Risden's Beach Corp.) and Block 29.02, Lot 1 (Point Pleasant Beach Surf Club).

To date, most seabeach amaranth in New Jersey has been concentrated between Sandy Hook and Seven Presidents Park in Monmouth County, with just a few plants per year occurring in Southern Monmouth, Ocean, Atlantic, or Cape May Counties. Within New Jersey, the 219 plants in Point Pleasant Beach in 2017 was by far the largest number of plants ever documented in one location south of Seven Presidents Park. Because this species is an annual, most of these plants have now likely died or will soon. However, it is likely that a substantial seedbank is present and could germinate in 2018. Thus, we are writing to ask for your help in maintaining these seeds and any plants that may occur in 2018 and beyond. This letter is provided as technical assistance under the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) (ESA).

### SEABEACH AMARANTH

Seabeach amaranth was federally listed as a threatened species in 1993. Seabeach amaranth was extirpated from New Jersey (*i.e.*, extinct in this State) from 1913 until its rediscovery in Sandy Hook, Sea Bright, and Monmouth Beach in 2000. A species fact sheet is enclosed.

An annual member of the amaranth family, seabeach amaranth has reddish stems and small, rounded, notched, spinach-green leaves. In New Jersey, these low-growing plants are typically about 4 to 8 inches across by late summer, but can occasionally reach 2 to 3 feet in diameter. The small white flowers and dark seeds are located in inconspicuous clusters along the stems.

Germination begins in late May and continues through the summer. Flowering and seed production begin as soon as plants reach sufficient size (June or July) and continue until the plants die between September and December (USFWS 1996).

Seabeach amaranth is native and restricted to Atlantic Coast beaches and barrier islands. The primary habitat of seabeach amaranth consists of overwash flats at accreting ends of islands, lower foredunes, and upper strands of non-eroding beaches (landward of the wrackline); although the species occasionally establishes small temporary populations in other habitats, including sound-side beaches, blowouts in foredunes, inter-dunal areas, and on sand and shell material deposited for beach replenishment or as dredge spoil. Seabeach amaranth usually grows on a nearly pure sand substrate, occasionally with shell fragments mixed in. Seabeach amaranth occupies elevations from 8 inches to 5 feet above mean high tide. The plant grows in the upper beach zone above the high tide line, and is intolerant of even occasional flooding during its growing season. The habitat of seabeach amaranth is sparsely vegetated with annual herbs and, less commonly, perennial herbs (mostly grasses) and scattered shrubs. Other plants commonly found with seabeach amaranth include sea rocket (*Cakile edentula*), seabeach spurge (*Chamaesyce polygonifolia*), and other species that require open, sandy beach habitats. However, this species is intolerant of competition and does not occur on well-vegetated sites (USFWS 1996).

Threats to seabeach amaranth include beach stabilization (particularly the use of beach armoring, such as sea walls and riprap), intensive recreational use, mechanical beach raking, and herbivory by insects (USFWS 1996, 2007). Kelly (2014) has shown that beach raking severely limits the distribution of sensitive beach plants like seabeach amaranth in New Jersey. However, Kelly (2016) has also found that modified beach management practices can be highly compatible with both rare plant conservation and beach recreation.

## CONSERVATION RECOMMENDATIONS

In an October 24, 2017 letter to the New Jersey Division of Land Use (DLUR) (enclosed), the Service recommended two seabeach amaranth protective zones in Point Pleasant Beach: from New Jersey Avenue to Philadelphia Avenue, and from Elizabeth Avenue to Michele Lane. In these zones, the Service recommends no beach raking from May 15 to November 30; limited vehicle use during this period; no sand scraping (*i.e.*, bulldozing) year round; and limited dune building activities such as sand fencing and vegetation planting. We have recommended that DLUR include these protective zones in any permits they issue (*e.g.*, for Beach and Dune Maintenance).

We note that the protective zones we recommend to DLUR shift annually, based on the distribution of plants over the previous 3 years.<sup>1</sup> Shifting zones can be difficult to manage. An alternative is the development of a Beach Management Plan (BMP), which offers more predictability in where conservation efforts will be focused. Development and implementation of a BMP at the municipal level is required following the initiation of federally funded beach nourishment. We understand that the U.S. Army Corps of Engineers (Corps) beach nourishment

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<sup>1</sup> In 2016, two plants were found at the end of New York Avenue and one plant was found between Carter Avenue and Main Street.



has not yet begun in Point Pleasant Beach, but could begin as early as 2018. More information on BMPs is enclosed.

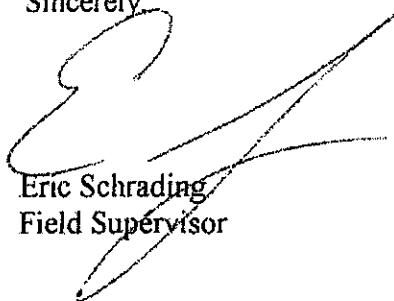
Starting in 2015, the Service began recommending Plant Protection Strips in all new and renewed BMPs. Based on research by Kelly (2014, 2016), the strips seek to provide back beach habitat for rare plants while ensuring continued recreation on the lower beach. More information on Plant Protection Strips is enclosed, but in short we recommend that the upper 10 to 25 percent of the beach width be left unraked and with minimal vehicle use.

The Service would like to schedule a meeting with Borough representatives, Risdén's Beach Corp, and Point Pleasant Beach Surf Club to seek a cooperative approach to protecting seabeach amaranth seeds and plants in the vicinity of New York Avenue for the rest of 2017 and through 2018. We would also like to invite the Pinelands Preservation Alliance (PPA), which currently has grant funding to assist municipalities with seabeach amaranth conservation. At the meeting, we would also like to discuss longer-term, Borough-wide issues such as the development of a BMP, the upcoming Corps beach nourishment, and endangered species considerations related to possible future DLUR and/or Corps permitting for a steel wall<sup>2</sup> proposed along Jenkinson's property in the northern part of the Borough.

Finally, we would like to explore opportunities to partner with the Borough and entities such as Jenkinson's Aquarium on outreach and education. For example, we understand the aquarium leads beach walks,<sup>3</sup> which would be an excellent opportunity to show Point Pleasant Beach visitors a federally listed plant and to explain the local role in protecting a new stronghold for this imperiled species. Efforts of a nearby beach town, Ocean Grove (Neptune Township), to protect seabeach amaranth are currently highlighted on the Service's web site.<sup>4</sup> Both the Service and PPA would be happy to support an outreach and education effort in Point Pleasant Beach.

We appreciate your consideration of the information and recommendations in this letter. We look forward to meeting with all of you to explore how we can work together to protect seabeach amaranth in Point Pleasant Beach. Please contact Meghan Kolk at (609) 382-5261, or [meghan\\_kolk@fws.gov](mailto:meghan_kolk@fws.gov), regarding a meeting date and location.

Sincerely,



Eric Schradin  
Field Supervisor

---

<sup>2</sup> [http://www.nj.com/ocean/index.ssf/2017/07/jenkinsons\\_reaches\\_settlement\\_with\\_state\\_feds\\_over.html](http://www.nj.com/ocean/index.ssf/2017/07/jenkinsons_reaches_settlement_with_state_feds_over.html)

<sup>3</sup> <https://jenkinsons.com/events/aquariums-more-the-the-shore/>

<sup>4</sup> <https://www.fws.gov/northeast/njfieldoffice/index.html>

**Enclosures:**

Seabeach amaranth fact sheet  
October 24, 2017 letter to DLUR  
BMP fact sheet  
2015 BMP recommendations  
Kelly 2016

**References:**

- Kelly, J.F., 2014. Effects of human activities (raking, scraping, off-road vehicles) and natural resource protections on the spatial distribution of beach vegetation and related shoreline features in New Jersey. *Journal of Coastal Conservation* 18(3), 383e398.
- Kelly, J.F., 2016. Assessing the spatial compatibility of recreational activities with beach vegetation and wrack in New Jersey: Prospects for compromise management. *Journal of Ocean & Coastal Management* 123(2016):9-17.
- U.S. Fish and Wildlife Service [USFWS]. 1996. Seabeach Amaranth (*Amaranthus pumilius*) Rafinesque Recovery Plan. Atlanta, Georgia. [https://ecos.fws.gov/docs/recovery\\_plan/961112b.pdf](https://ecos.fws.gov/docs/recovery_plan/961112b.pdf) [Accessed October 29, 2017]
- U.S. Fish and Wildlife Service [USFWS]. 2007. Seabeach Amaranth (*Amaranthus pumilius*) 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service, Raleigh, North Carolina. 41 pp. [https://ecos.fws.gov/docs/five\\_year\\_review/doc1068.pdf](https://ecos.fws.gov/docs/five_year_review/doc1068.pdf) [Accessed October 29, 2017]

**cc via email:****Subject: seabeach amaranth in Point Pleasant Beach**

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information@jenkinsons.com  
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todd.pover@conservewildlifenj.org  
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## Sea-beach Amaranth

### *Amaranthus pumilus* Rafinesque

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#### Summary

Sea-beach amaranth is an annual plant of the Amaranth family (Amaranthaceae) that exhibits low sprawling growth and small spinach-like leaves, and is restricted to open sandy portions of ocean beaches between the high tide line and the toe of the primary dune. It was first collected in the early Nineteenth Century in New Jersey, and its range was subsequently determined to extend from Massachusetts to South Carolina. Although originally described as abundant, the number of populations of *A. pumilus* declined precipitously throughout the Twentieth Century and, following a collection from Ocean County in 1913, vanished from the flora of New Jersey. Habitat destruction and alteration, incompatible beach grooming practices and recreational activities have all contributed to the decline of this species. By 1989, the species was restricted to a few populations in North and South Carolina. In 1991 New Jersey included *A. pumilus* in its first official Endangered Plant Species List, and in 1993 the U.S. Department of the Interior, Fish and Wildlife Service, determined *A. pumilus* to be a federally threatened species under the authority of the Endangered Species Act. In 2000 the plant returned to newly created beaches in Monmouth County and adjacent habitat in Sandy Hook. Intensive surveys performed in 2001 revealed populations or individuals in all four coastal New Jersey counties. Despite its reappearance, the plant remains highly vulnerable to the uses and practices that caused its extirpation throughout most of the previous Century.

#### Description

An annual plant that exhibits low, relatively prostrate growth with fleshy, rounded, dark green leaves (1-2 cm long) clustered near the tips of fleshy, reddish stems. Plants germinate from April to July, initially forming a small sprig but soon branch and form a clump which binds sand that accumulates at its base. Larger plants may contain over one hundred stems which branch from the center and attain a diameter of over a meter, although plants are typically 20-40 cm in diameter. Flowering begins in June with seed production in July and until senescence in early winter. Plants are monoecious (having male and female flowers on the same plant). The inconspicuous yellow flowers are borne in the leaf axils and are wind pollinated. The species is a prolific seed producer, and the waxy seed are relatively large (2-2.5 mm) and are believed to be viable for long periods. Seed dispersal may occur by wind, water and possibly birds, and whole plants and seed are temporarily buoyant. The life history of this plant, combined with the dynamic coastal habitat within which it evolved, give this species the ability to move within the coastal landscape as a fugitive species, colonizing habitat as it becomes available in both space and time.

#### Habitat and Associates

The species is restricted to sandy ocean beaches, and its habitat consists of the sparsely vegetated zone between the high tide line and the toe of the primary dune. This is also the zone in which seed are deposited and accumulate

following dispersal. Individuals are occasionally found on back dunes, exposed shoals, dune blowouts and bayside strands, although these occurrences tend to be small and temporary. Plants have also recently been found in beach replenishment areas. Additional plant species associated with this habitat include American beachgrass (*Ammophila breviligulata*), sea rocket (*Cakile edentula*), Russian thistle

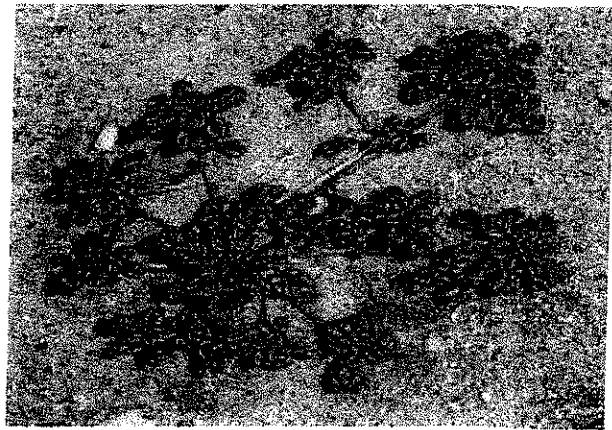


Photo by Mark H. Burtis - U.S. Army Corps of Engineers

(*Salsola kali*), seaside spurge (*Chamaesyce polygonifolia*), seabeach sandwort (*Honckenia peploides*), seabeach knotweed (*Polygonum glaucum*), seabeach purslane (*Sesuvium maritimum*) and seabeach orach (*Atriplex arenaria*). However, *A. pumilus* is intolerant of competition, and generally only sea rocket occupies the specific zone where *A. pumilus* is predominantly found.

## Distribution

*Amaranthus pumilus* was first collected about 1802 by C.R. Rafinesque from Tuckers Island in Ocean County, NJ, a 600-acre landform which was subsequently eliminated from the geography of the state by a series of severe storms during the early 20<sup>th</sup> Century. The plant has since been collected from numerous states bordering the Atlantic Ocean and its historical range extended from Massachusetts to South Carolina. A rangewide census of the plant in 1990 revealed 55 remaining populations (34 in NC, 8 in SC, 13 in NY), and extirpation from six states throughout its historical range. In New Jersey, although the plant was described as frequent in the late 19<sup>th</sup> Century, its abundance soon declined dramatically and a collection from Island Beach State Park, Ocean County, in 1913 was the last time the species had been collected in NJ until 2000. In 1989 New Jersey included *A. pumilus* in its first official Endangered Plant Species List, and in 1993 the U.S. Department of the Interior, Fish and Wildlife Service, determined *A. pumilus* to be a federally threatened species. Since the last rangewide census, severe reductions in populations in the Carolinas as a result of a series of hurricanes and Northeasters were accompanied by the reappearance of several populations on Long Island, NY, in 1990. In 2000 *A. pumilus* was discovered during piping plover survey activities in Monmouth County, NJ, by the Army Corps of Engineers on newly created beaches. A total of 919 plants were subsequently found in 2000 in the area between and including Monmouth Beach and Sandy Hook. Statewide surveys performed in 2001 found 5,813 plants in all four coastal counties, although all but 69 of these plants occurred in the Monmouth Beach-Sandy Hook area. Theories for the reappearance of *A. pumilus* in the NY-NJ region include transport of seeds through storm events and/or resurfacing of seed from beachfill operations.

## Threats

Habitat destruction and alteration combined with the recreational development and public use of ocean beaches were responsible for declines in *A. pumilus* beginning in the late 19<sup>th</sup> Century and remain in effect today. Recreational use and the practices used to groom beaches for such recreational activities destroy plants and effectively preclude the establishment of plants. These activities include beach raking, scraping, compaction by beach buggies and other vehicles, and trampling. In addition, hard stabilization structures, like jetties, groins, seawalls and bulkheads, eliminate or drastically alter the habitat required by this species. Finally, herbivory by several species of native webworms, likely exacerbated by coastal habitat development, is believed to have contributed to the decline of *A. pumilus*.

## Monitoring Recommendations

Annual monitoring of all suitable habitat for *A. pumilus* throughout NJ and development of a complete census of plants and their locations is minimally required, at least until stabilization of the statewide population is achieved. Special attention should be paid to beaches that receive beachfill renourishment, significant beach morphology alterations, and other impacts.

## Management Recommendations

Symbolic string and post fencing, similar to that used to fence piping plover nest areas, should be installed surrounding all emergent plants, and all public access and beach maintenance activities prohibited within fenced areas. To help ensure plant reemergence in previously recorded locations or establishment in new areas, an area free of disturbance (raking, scraping, vehicle access, etc.) should be established during the growing season (May to December) in all or selected areas of suitable habitat extending from the toe of the primary dune or edge of established vegetation to the mean high tide line.

## Selected References

Bucher, M. and A. Weakley. 1990. Status survey of seabeach amaranth (*Amaranthus pumilus* Rafinesque) in North and South Carolina. Report to North Carolina Plant Conservation Program, North Carolina Dept. of Agriculture, Raleigh, NC, and Asheville Field Office, U.S. Fish and Wildlife Service, Asheville, NC. 148 pp.

U.S. Fish and Wildlife Service. 1993. Endangered and threatened wildlife and plants; determination of seabeach amaranth (*Amaranthus pumilus*) to be a threatened species. Federal Register 58(65) 18035-18042.

U.S. Fish and Wildlife Service. 1996. Recovery plan for seabeach amaranth (*Amaranthus pumilus*) Rafinesque. Atlanta, GA. 59 pp.

### For additional information please contact:

New Jersey Department of Environmental Protection  
Division of Parks and Forestry  
Office of Natural Lands Management  
P.O. Box 404  
Trenton, New Jersey 08625-0404  
609-984-1339  
[NatLands@dep.state.nj.us](mailto:NatLands@dep.state.nj.us)



NJ Department of Environmental Protection  
Division of Parks and Forestry

Natural Lands Management



In Reply Refer To:  
2018-TA-0081

# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

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Diane Dow, Director  
Division of Land Use Regulation  
New Jersey Department of Environmental Protection  
P.O. Box 439  
501 East State Street, Floor 2  
Trenton, New Jersey 08625-0439  
ATTN: Colleen Keller

OCT 24 2017

Dear Ms. Dow:

This letter transmits the U.S. Fish and Wildlife Service's (Service) recommendations for protection of the federally listed (threatened) plant seabeach amaranth (*Amaranthus pumilus*) on Atlantic coastal beaches within New Jersey for fall 2017 through fall 2018. This letter is provided as technical assistance pursuant to the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

### RECOMMENDED PROTECTIVE MEASURES

The Service recommends managing the areas indicated below (protective zones) for the protection of seabeach amaranth over the next 12 months. The delineation of the protective zones was based upon the distribution of plants during the 2015 to 2017 growing seasons. Areas where no plants have been observed since 2014 are no longer listed as protective zones. The protective zones remain similar to those recommended in past years, with a few key changes.

The distribution of plants will likely shift annually; therefore, the Service will revise the recommended protective zones each fall based on the plant's known distribution in previous years. Beach managers and Coastal Area Facility Review Act (N.J.S.A. 13:19-1 *et seq.*) (CAFRA) permittees should be advised that the seabeach amaranth growing season is from May 15 to November 30; however, plants may not be evident on the beach until July. The Service may be contacted with any questions regarding seabeach amaranth and its protection, or to report a new occurrence of the plant outside established protective zones. The Service recommends the following management actions within protective zones.

- **Prohibit beach raking** from the landward limit of the beach berm (*i.e.*, dune, sea wall, bulkhead, boardwalk, commercial/residential structure) to the mean high-water line from May 15 to November 30. This prohibition should be reflected in CAFRA permits from the New Jersey Division of Land Use Regulation (DLUR). Applicants requesting a waiver from permit conditions regarding the length or width of a "no

rake” zone should contact the Service to arrange a site visit, and should be prepared to propose additional areas of suitable habitat elsewhere within the same municipality that will be managed for seabeach amaranth.

- ***Prohibit sand scraping*** (i.e., bulldozing) year round. This prohibition should be reflected in CAFRA permits from the DLUR.
- ***Restrict vehicle use*** to only essential (non-routine) and emergency services, and to the area below the mean high-water line. These restriction should be implemented from May 15 to November 30.
- ***Route people away from protective zones***, in areas of high pedestrian traffic, using string-and-post symbolic fencing. The Service may be contacted for site-specific fencing recommendations.
- ***Limit vegetation planting and sand fencing*** to dune areas, allowing the upper beach to remain unstabilized and sparsely vegetated. Use only native species of vegetation for any planting in accordance with N.J.A.C. 7:7E-3A.4.
- ***Coordinate surveys and monitoring with the Service.***

The above recommendations do not satisfy other restrictions or replace ongoing management activities for the protection of beach-nesting birds. The enclosed table gives plant numbers by municipality or other local jurisdiction. Beach managers can contact the Service for locational details.

In many areas, noted in the table below, the Service, the New Jersey Division of Fish and Wildlife, and local land managers have jointly approved a Beach Management Plan (BMP). Where an approved BMP is in place, the Service recommends that the conditions of any CAFRA permit require adherence to the provisions of the approved BMP, instead of reliance on shifting protective zones. Beach managers should note that some approved BMPs call for curtailment of beach raking and other activities based on occurrence of listed species even in designated “recreational zones,” and other BMP provisions to protect seabeach amaranth apply even if no plants have been observed in recent years. Beach managers should also note that, starting in 2016, the Service began asking for designation of shore-parallel, back-beach “plant protection strips” in all new and revised BMPs; see enclosed information.

## PROTECTIVE ZONES AND BEACH MANAGEMENT PLANS

Protective zones and approved BMPs are listed below by county and municipality.

| Jurisdiction           | Protective Zones or Date of Approved BMP                                                                                                   |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Monmouth County</b> |                                                                                                                                            |
| Port Monmouth          | <u>Protective Zone</u> : Bayshore Waterfront Park, beginning 400 feet south of the jetty (Pews Creek Inlet) and extending 1,400 feet east. |

| <b>Jurisdiction</b>                                | <b>Protective Zones or Date of Approved BMP</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gateway National Recreation Area - Sandy Hook Unit | <u>Protective Zone</u> : The entire ocean-front beach outside of designated recreational centers, including the U.S. Coast Guard Station.<br><i>This is consistent with the approved 2009 Shoreside Threatened and Endangered Species Beach Management Plan, which is in need of updating.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Sea Bright Borough                                 | <u>Approved BMP</u> : Dated September 2015.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Monmouth Beach Borough                             | <u>Approved BMP</u> : Dated September 2015.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Seven Presidents Oceanfront Park                   | <u>Approved BMP</u> : Dated April 2016.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Long Branch City                                   | <u>Approved BMP</u> : Dated May 2016.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Ocean Grove (Neptune Township)                     | <u>Protective Zone</u> : From the pier at Webb Avenue south to the Bradley Beach border.<br><i>The Service appreciates the cooperation of Ocean Grove in managing seabeach amaranth during the 2017 growing season. We recommend continuation of similar management provisions during the 2018 growing season. There should be no beach bulldozing in the protective zone even outside of the growing season, to avoid burial of the seedbank.</i>                                                                                                                                                                                                                                                                                                             |
| Bradley Beach Borough                              | <u>Protective Zone</u> : From the Ocean Grove border extending south 200 feet.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Avon-by-the-Sea                                    | <u>Protective Zone</u> : From the pavilion south of Norwood Avenue to Sylvania Avenue.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Belmar Borough                                     | <u>Protective Zone</u> : Shark River Inlet jetty to the pier at First Avenue.<br><u>Protective Zone</u> : Second Avenue to Fifth Avenue.<br><u>Protective Zone</u> : North Boulevard south to the Spring Lake border.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Spring Lake Borough                                | <u>Protective Zone</u> : From the Belmar border south to Pitney Avenue.<br><u>Protective Zone</u> : From the southern end of the boardwalk to the Sea Girt Borough border.<br><i>The Service appreciates the cooperation of Spring Lake in managing seabeach amaranth during the 2017 growing season. We recommend continuation of similar management provisions during the 2018 growing season. There should be no beach bulldozing in the protective zone even outside of the growing season, to avoid burial of the seedbank.</i>                                                                                                                                                                                                                           |
| Sea Girt Borough                                   | <u>Protective Zone</u> : From the Spring Lake border to Beacon Boulevard.<br><i>In this protective zone, permits should require Sea Girt to follow the June 2010 Settlement Agreement among the Borough of Sea Girt, the United States Fish and Wildlife Service, and the New Jersey Department of Environmental Protection (i.e., within the areas identified in the Agreement as "North Beach" and "Pavilion Beach").</i><br><br><u>Protective Zone</u> : From New York Boulevard to Seaside Place.<br><i>Unless the 2010 Settlement Agreement is updated and converted to a BMP, the Service recommends that conditions of any permit issued for activities on Sea Girt beaches over the next year include the additional protective zone listed above.</i> |

| <b>Jurisdiction</b>                        | <b>Protective Zones or Date of Approved BMP</b>                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sea Girt National Guard Training Center    | <u>Approved BMP</u> : Integrated Natural Resources Management Plan, dated March 2013.                                                                                                                                                                                                                                                                                                                                 |
| <b>Ocean County</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Point Pleasant Beach Borough               | <u>Protective Zone</u> : From New Jersey Avenue to Philadelphia Avenue.<br><i>The above-listed protective zone supported 219 seabeach amaranth plants in 2017, or 40 percent of the Statewide total outside of Sandy Hook. This area is a high conservation priority, and includes two privately owned parcels—Block 46.02, Lot 3 (Risden's Beach Corp.) and Block 29.02, Lot 1 (Point Pleasant Beach Surf Club).</i> |
| Island Beach State Park                    | <u>Protective Zone</u> : From Elizabeth Avenue to Michele Lane.<br><u>Approved BMP</u> : Dated February 2017.                                                                                                                                                                                                                                                                                                         |
| Barnegat Light Borough                     | <u>Protective Zone</u> : The inlet and ocean front beach from the jetty south to East 5 <sup>th</sup> Street (south and east to approximately 39.757375, -74.096796).<br><u>Protective Zone</u> : East 20 <sup>th</sup> Street to East 22 <sup>nd</sup> Street.<br><u>Protective Zone</u> : East 24 <sup>th</sup> Street to East 29 <sup>th</sup> Street.                                                             |
| Long Beach Township                        | <u>Protective Zone</u> : Seaview Drive South to Sandy Cove Lane.<br><u>Protective Zone</u> : Panorama Drive South to Windrift Lane.<br><u>Protective Zone</u> : 300 feet north and south of 39.714792, -74.128037.<br><u>Protective Zone</u> : Emile Lane to Poseidon Lane.                                                                                                                                           |
| Harvey Cedars Borough                      | <u>Approved BMP</u> : Dated January 2010.<br><br><u>Protective Zone</u> : Mercer Avenue to East Atlantic Avenue.<br><u>Protective Zone</u> : East Union Avenue to James Street.<br><i>Unless the 2010 BMP is updated, the Service recommends that conditions of any permit issued for activities on Harvey Cedars beaches over the next year include the protective zones listed above.</i>                           |
| Surf City                                  | <u>Approved BMP</u> : Dated January 2011.                                                                                                                                                                                                                                                                                                                                                                             |
| Edwin B. Forsythe National Wildlife Refuge | <u>Protective Zone</u> : Holgate Unit.<br><i>This is consistent with the approved 2004 Comprehensive Conservation Plan.</i>                                                                                                                                                                                                                                                                                           |
| <b>Atlantic County</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Edwin B. Forsythe National Wildlife Refuge | <u>Protective Zone</u> : Little Beach Unit.<br><i>This is consistent with the approved 2004 Comprehensive Conservation Plan.</i>                                                                                                                                                                                                                                                                                      |
| North Brigantine Natural Area              | <u>Approved BMP</u> : New Jersey Division of Parks and Forestry's interim plan for the protection of seabeach amaranth, dated April 2008.<br><i>This plan is in need of updating.</i>                                                                                                                                                                                                                                 |
| Brigantine City                            | <u>Approved BMP</u> : Dated November 2011.                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Cape May County</b>                     |                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Ocean City                                 | <u>Approved BMP</u> : Dated January 2016.                                                                                                                                                                                                                                                                                                                                                                             |
| Corsons Inlet State Park                   | <u>Approved BMP</u> : New Jersey Division of Parks and Forestry's interim plan for the protection of seabeach amaranth, dated April 2008.<br><i>This plan is in need of updating.</i>                                                                                                                                                                                                                                 |



| <b>Jurisdiction</b>                 | <b>Protective Zones or Date of Approved BMP</b>                                                                                                                                       |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strathmere (Upper Township)         | <u>Approved BMP</u> : Dated March 2011.                                                                                                                                               |
| Sea Isle City                       | <u>Approved BMP</u> : Dated March 2011.                                                                                                                                               |
| Avalon Borough                      | <u>Approved BMP</u> : Dated April 2009.                                                                                                                                               |
| Stone Harbor Borough                | <u>Approved BMP</u> : Including the Stone Harbor Point Conservation Plan, dated March 2008.                                                                                           |
| North Wildwood City                 | <u>Approved BMP</u> : Dated August 2009.                                                                                                                                              |
| Cape May National Wildlife Refuge   | <u>Protective Zone</u> : Two-Mile Beach Unit.<br><i>This is consistent with the approved 2004 Comprehensive Conservation Plan.</i>                                                    |
| U.S. Coast Guard Loran Support Unit | <u>Protective Zone</u> : Cape May National Wildlife Refuge boundary south to the Cape May Inlet jetty.                                                                                |
| U.S. Coast Guard Training Center    | <u>Approved BMP</u> : Integrated Natural Resource Management Plan, dated October 2017.                                                                                                |
| Cape May City                       | <u>Approved BMP</u> : Dated March 2008.                                                                                                                                               |
| Cape May Point State Park           | <u>Approved BMP</u> : New Jersey Division of Parks and Forestry's interim plan for the protection of seabeach amaranth, dated April 2008.<br><i>This plan is in need of updating.</i> |
| Cape May Point Borough              | <u>Approved BMP</u> : Dated April 2016.                                                                                                                                               |

## CLOSING REMARKS

The Service appreciates the cooperation of the DLUR in protecting seabeach amaranth in New Jersey. Please contact Wendy Walsh at (609) 382-5274 or [wendy\\_walsh@fws.gov](mailto:wendy_walsh@fws.gov) if you have any questions about the above recommendations or require further assistance.

Sincerely,



Eric Schrading  
Field Supervisor

Enclosures (2)

**email distribution list:**

**Subject:** 2017-2018 seabeach amaranth protective zones

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# Seabeach Amaranth New Jersey Totals

| Site Name                                                                                 | 2017       | 2016       | 2015       | Average    |
|-------------------------------------------------------------------------------------------|------------|------------|------------|------------|
| Keansburg*                                                                                | 0          | 0          | 0          | 0          |
| Port Monmouth                                                                             | 1          | 0          | 4          | 2          |
| Sea Bright North                                                                          | 159        | 92         | 3          | 85         |
| Sea Bright Central                                                                        | 4          | 3          | 0          | 2          |
| Monmouth Beach North                                                                      | 7          | 27         | 13         | 16         |
| Monmouth Beach Central                                                                    | 0          | 2          | 2          | 1          |
| Monmouth Beach South                                                                      | 0          | 11         | 18         | 10         |
| Seven Presidents Park                                                                     | 17         | 34         | 86         | 46         |
| Long Branch                                                                               | 3          | 1          | 53         | 19         |
| Ocean Grove (Neptune Twp)                                                                 | 67         | 2          | 0          | 23         |
| Bradley Beach*                                                                            | 0          | 0          | 0          | 0          |
| Avon-by-the-Sea                                                                           | 0          | 0          | 1          | 0          |
| Belmar - South of Shark R. Inlet                                                          | 2          | 1          | 0          | 1          |
| Belmar Central                                                                            | 1          | 0          | 0          | 0          |
| Spring Lake - North                                                                       | 3          | 2          | 0          | 2          |
| Wreck Pond (Spring Lake and Sea Girt)                                                     | 18         | 6          | 8          | 11         |
| Sea Girt - Central                                                                        | 9          | 0          | 1          | 3          |
| Sea Girt - National Guard                                                                 | 1          | 11         | 50         | 21         |
| Manasquan*                                                                                | 0          | 0          | 0          | 0          |
| Monmouth County Subtotal                                                                  | 292        | 192        | 239        | 241        |
| Point Pleasant                                                                            | 219        | 3          | 0          | 74         |
| Bayhead*                                                                                  | 0          | 0          | 0          | 0          |
| Mantoloking*                                                                              | 0          | 0          | 0          | 0          |
| Brick Township*                                                                           | 0          | 0          | 0          | 0          |
| Seaside Heights*                                                                          | 0          | 0          | 0          | 0          |
| Island Beach State Park Northern Natural Area                                             | 5          | 4          | 1          | 3          |
| Island Beach State Park Central Recreational Area*                                        | 0          | 0          | 0          | 0          |
| Island Beach State Park Southern Natural Area                                             | 7          | 1          | 0          | 3          |
| Barneget Light Borough                                                                    | 4          | 0          | 0          | 1          |
| Long Beach Township                                                                       | 5          | 0          | 0          | 2          |
| Harvey Cedars Borough                                                                     | 3          | 0          | 0          | 1          |
| Ocean County Subtotal                                                                     | 243        | 8          | 1          | 84         |
| North Brigantine Natural Area                                                             | 2          | 1          | 0          | 1          |
| Brigantine*                                                                               | 0          | 0          | 0          | 0          |
| Atlantic City*                                                                            | 0          | 0          | 0          | 0          |
| Seaview Harbor Marina (Longport)*                                                         | 0          | 0          | 0          | 0          |
| Atlantic County Subtotal                                                                  | 2          | 1          | 0          | 1          |
| Ocean City                                                                                | 0          | 0          | 3          | 1          |
| Corsons Inlet State Park - North                                                          | 1          | 0          | 0          | 0          |
| Corsons Inlet State Park - South*                                                         | 0          | 0          | 0          | 0          |
| Upper Township - Strathmere                                                               | 1          | 0          | 0          | 0          |
| Sea Isle City*                                                                            | 0          | 0          | 0          | 0          |
| Avalon                                                                                    | 0          | 1          | 0          | 0          |
| Coast Guard Loran Support Unit*                                                           | 0          | 0          | 0          | 0          |
| Cape May Point State Park*                                                                | 0          | 0          | 0          | 0          |
| Cape May County Subtotal                                                                  | 2          | 1          | 3          | 2          |
| <b>Total Seabeach Amaranth Plants in New Jersey</b>                                       | <b>539</b> | <b>202</b> | <b>243</b> | <b>328</b> |
| <b>(Excluding Federally Managed Conservation Lands)</b>                                   |            |            |            |            |
| <i>*Listed sites with 0 plants in the past 3 years have a previous history of plants.</i> |            |            |            |            |

U.S. Fish & Wildlife Service

# Beach Management Planning in New Jersey

## *For the Protection of Federally and State-listed Threatened and Endangered Species*

Seven Presidents Oceanfront County Park, Monmouth County, New Jersey

Photograph: / USFWS

### **Beach Management Planning: A Brief Overview**

New Jersey's beaches are a summer playground for thousands of residents and visitors each year. This narrow ribbon of sand is also home to a remarkable array of imperiled beach-nesting birds and plants. Federal and State agencies are working with Atlantic coastal towns and other land managers in New Jersey to develop site-specific beach management plans for the protection of federally and State-listed threatened and endangered species.

The purpose of beach management planning is to provide a framework for cooperation among local beach managers, the New Jersey Department of Environmental Protection (NJDEP), and the U. S. Fish & Wildlife Service (Service) in the stewardship of federally and State-listed endangered and threatened beach-nesting birds and flora occurring on New Jersey's beaches. The goal of a beach management plan is to provide for long-term protection and recovery of listed species populations, while recognizing the need for storm protection and recreation. Each plan includes descriptions of the roles and responsibilities of local beach managers, the NJDEP, and the Service in the protection and management of listed species. Upon completion, management plans are approved by the appropriate governmental body, such as a town council, and a memorandum of agreement is signed by all parties.

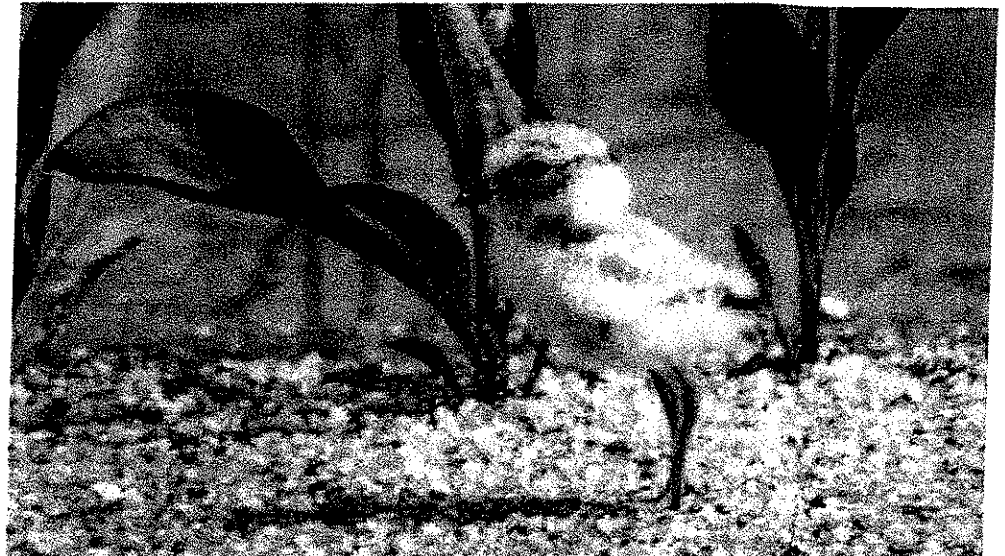
### **What is Included in a Beach Management Plan?**

Plans are developed with full input of local officials and staff directly responsible for beach management activities including mechanical beach raking, trash removal, life guards, law enforcement, and recreational uses to reflect a beach's operational needs. Plans address a wide range of issues including: symbolic fencing for protection and management of listed species, trash collection and beach clean-ups, beach raking, sand fencing, vegetation management, predator management, enforcement of pet laws and State Coastal Zone Management rules, operation of vehicles on the beach, designation of portions of beach as protected management zones for listed species, and the role of local site managers in endangered species management.

The plans also identify the listed species present at individual beaches in order to determine which Federal and State laws and regulations are applicable. For example, the Federal Endangered Species Act of 1973, the New Jersey Endangered and Nongame Species Conservation Act of 1973, and the New Jersey Coastal Zone Management rules protect federally and State-listed species. Beach-nesting birds are also protected under the Federal Migratory Bird Treaty Act of 1918. Finally, plans should be consistent with Service guidelines for managing piping plovers (*Charadrius melodus*) and seabach amaranth (*Amaranthus pumilus*).

Piping plover (*Charadrius melodus*)

Photograph: Gene Nieminen / USFWS



## Beach Nesting Birds



Piping plover (*Charadrius melodus*) – federally listed as threatened and State-listed as endangered, territorial nester

Black skimmer (*Rynchops niger*) – State-listed as endangered, colonial nester

Least tern (*Sterna antillarum*) – State-listed as endangered, colonial nester

Horned lark (*Eremophila alpestris*) – State-listed as threatened, solitary nester

Common tern (*Sterna hirundo*) – State species of special concern, colonial nester

American oystercatcher (*Haematopus palliatus*) – State species of special concern, territorial nester

## Beach Plants



Seabeach amaranth (*Amaranthus pumilus*) – federally listed as threatened and State-listed as endangered, annual plant

Seabeach knotweed (*Polygonum glaucum*) – State-listed as endangered, annual plant

Seabeach sandwort (*Honckenya peploides*) – State-listed as endangered, perennial plant

Seabeach evening-primrose (*Oenothera humifusa*) – State species of concern, annual plant

Seabeach purslane (*Sesuvium maritimum*) – State species of concern, annual plant

Sea-milkwort (*Glaux maritima*) – State species of concern (presumed extirpated), perennial plant

## Beach Insect



Northeastern beach tiger beetle (*Cicindela dorsalis dorsalis*) – federally listed as threatened and State-listed as endangered

## Listed Species

Beach management plans address all federally and State-listed species, and other species of special concern that may occur within a particular beach jurisdiction. The plans are flexible enough to accommodate future species colonization.

## Key Elements of a Beach Management Plan

- applicable laws and regulations
- roles and responsibilities of each party to the plan
- management zones and natural areas
- recovery goals for listed species
- management issues
  - biological surveys and monitoring
  - predation, herbivory, and disease
  - human disturbance (motorized and non-motorized)
  - beach management and maintenance
    - beach raking
    - refuse and large debris removal
    - dune management
    - beach nourishment
    - sand scraping
    - beach access structures
- education and outreach

## Benefits of Developing a Beach Management Plan

Publicly funded beach nourishment projects authorized by the U.S. Army Corps of Engineers (Corps) benefit shore communities by providing storm protection and increased opportunities for recreation and tourism. Widened beaches also attract federally and State-listed species. To ensure protection of listed species, the Corps and the NJDEP require that towns and public lands receiving beach nourishment prepare a beach management plan. Developing and implementing such a plan helps Federal, State, and local officials manage and minimize potential conflicts between recreation and species protection. Furthermore, designation of different beach zones through the planning process—to promote more active recreation in some areas and more passive beach activities in others (e.g., bird watching, nature walks, shell collecting)—increases an area's ability to provide a greater diversity of recreation. The availability of popular, nature-oriented recreation benefits the residents and visitors of beach communities. In 2011 almost 2 million U.S. residents participated in wildlife watching in New Jersey, with associated expenditures of nearly \$1 billion (U.S. Department of the Interior and U.S. Department of Commerce, 2014). In addition to ecotourism, beach management planning promotes

educational opportunities. Management plans can provide for the development of public educational displays regarding listed species, educational talks, and interpretive nature walks. The Service and NJDEP are also available to provide information regarding federally and State-listed species for local newspapers and other publications.

## Promote a Beach Management Plan

Encourage your municipality to work with the U.S. Fish & Wildlife Service to develop a beach management plan to protect federally and State-listed threatened and endangered species.



Least tern (*Sterna antillarum*)

All photographs this page: Gene Nieminen / USFWS



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**Federal Relay Service for the deaf and hard-of-hearing**  
**800/877 8339**

## May 2016

References: U.S. Department of the Interior, U.S. Fish & Wildlife Service and U.S. Department of Commerce, U.S. Census Bureau. 2014. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, New Jersey. Washington, D.C.

## **U.S. Fish and Wildlife Service Recommendations for Beach Management Plans: Precautionary Zones, Plant Protection Strips, and Red Knot Protections**

The U.S. Fish and Wildlife Service (Service) works in partnership with the New Jersey Division of Fish and Wildlife's Endangered Nongame Species Program (ENSP) and local beach managers to develop and implement Beach Management Plans (Plans or BMPs).<sup>1</sup> The BMPs focus on plants and animals listed as endangered, threatened, or of special concern under Federal and/or State law. The Service encourages all beach management entities in New Jersey to develop a BMP. Plans are required for those New Jersey beaches that receive publicly-funded beach nourishment projects, such as projects carried out by the U.S. Army Corps of Engineers (Corps). Federal and State laws require beach management that is compatible with the needs of listed species, particularly on beaches maintained through publicly-funded projects. The responsibility for protecting listed species is shared among the Corps, the Service, the State, and local beach managers.

The BMPs address a wide range of issues such as symbolic fencing for protection and management of listed species, trash collection, beach raking, dune management, vehicles, and law enforcement. The issues addressed by Plans are generally consistent across the coast, but the specific provisions of each Plan are site-specific and developed cooperatively by local beach managers, the ENSP, and the Service. This document does not address all the issues that are covered by the BMPs. Instead, this document provides justifications and recommendations for three particular kinds of conservation practices that should be included in BMPs—Precautionary Zones, Plant Protection Strips, and Red Knot (*Calidris canutus rufa*) Protections. These recommendations supplement guidelines issued previously for listed beach species (U.S. Fish and Wildlife Service 1994, 1997, 2002, 2005) and are now being incorporated into BMPs with the goal of enhancing recovery.

### **Precautionary Zones**

Precautionary Zones are areas that are not known to currently support federally or State-listed beach species, including piping plover (*Charadrius melodus*), but that are believed to be of sufficient quality habitat to support those species. The designation of a Precautionary Zone within a municipality will be made on a case-by-case basis using best professional judgment, but will be incorporated in most BMPs. Decisions regarding whether and where to establish precautionary zones within a municipality will be based on opportunities to maintain or promote suitable habitat, using the following criteria.

1. The presence of habitat features that promote use by listed species, such as the following:
  - areas with overwash, open connections to bayside foraging habitats, or at accreting ends of barrier islands;
  - gently sloped beaches (*i.e.*, lower foredunes and upper strands of non-eroding beaches);
  - the presence of salt pond intertidal “flats”;

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<sup>1</sup> [http://www.fws.gov/northeast/njfieldoffice/pdf/Beach\\_Manage\\_.pdf](http://www.fws.gov/northeast/njfieldoffice/pdf/Beach_Manage_.pdf)

- the presence of ephemeral pools;
  - a well-developed wrack line;
  - sparse vegetation; and
  - a more natural, less stabilized dune line.
2. Proximity to inlets: Proximity to inlets is of sufficient importance to federally and State-listed species that it is considered a criterion on its own. Inlet beaches often contain high-quality habitat for piping plovers and other beach-nesting birds because they typically have low wave energy, accreting sandflats, and a rich infaunal community providing good foraging opportunities. Research has shown that the majority of piping plover nests in New Jersey occur on inlet beaches, which are commonly greater than 150 meters wide and undeveloped (Maslo *et al.* 2011). Likewise, seabeach amaranth (*Amaranthus pumilis*) is primarily found near inlets (U.S. Fish and Wildlife Service 1996), and unimproved inlets are a preferred habitat for red knots (Harrington 2008; U.S. Fish and Wildlife Service 2014).
  3. Relatively low levels of potential disturbance from factors including, but not limited to, the following:
    - dogs;
    - recreational beachgoers;
    - kite flying;
    - driving on the beach;
    - fireworks;
    - predators; and
    - lifeguards, public works personnel, etc.
  4. The extent of available habitat (length and width of beach).
  5. The proximity to other areas with known use by federally and State-listed species (provides better opportunities for colonization to occur).
  6. Historical occurrence of federally and State-listed species (indicates that habitat was of sufficient quality and quantity to have been used in the past).

### **Plant Protection Strips**

New Jersey's upper beaches (from the wrack line or high water mark to the dune or other landward limit, such as a boardwalk or bulkhead) support a number of listed beach plants including seabeach amaranth. Seabeach amaranth was extirpated from New Jersey in 1913 and remained absent from the State until its rediscovery in 2000 (U.S. Fish and Wildlife Service 2007). Following a period of geographic re-expansion in the 2000s, seabeach amaranth populations recently declined sharply. Range-wide, plant numbers declined more than 99% between 2002 and 2013. In New Jersey, seabeach amaranth counts from 2007 to 2014 were down more than 75% compared to the period from 2001 to 2006. Moreover, New Jersey's remaining plants are very concentrated, with more than 95% located in Sandy Hook. Thus, populations outside of Sandy Hook are at high risk of extirpation. In 2014, outside of Sandy

Hook, only 11 plants were observed in Monmouth County, 7 were observed in Ocean County, and none were found in Atlantic or Cape May Counties.

However, seabeach amaranth does have potential to recover in New Jersey. This species has a long-lived seedbank, with fresh seeds dispersed by wind and water (U.S. Fish and Wildlife Service 1996). These traits make seabeach amaranth an effective colonizer of suitable habitats when germination and plant development are not precluded by human activities. The primary human activities limiting the distribution of beach plants like seabeach amaranth are mechanical beach raking and off-road vehicle use (Kelly 2014). Thus, recovery of seabeach amaranth and other listed beach plants will likely be enhanced by limiting these activities in the upper beach areas where the plants occur.

The first generation of BMPs, which were approved from 2006 to 2011, generally provided plant protections incidental to those for beach-nesting birds. Indeed, areas set aside for beach-nesting birds do generally support rare beach plants as well, largely due to the exclusion of beach rakes and other vehicles. However, population declines in seabeach amaranth and other beach plants show that additional measures are necessary to conserve and restore these species. In particular, beach plants would likely benefit from “corridors” that can support seed exchange between protected areas. These corridors can also allow for recolonization of a protected area following storms or other events that result in a localized decline or extirpation.

Kelly (2015) found that recreational beach users (*e.g.*, swimmers, walkers, sunbathers, off-road vehicles) are concentrated lower on the beach profile (nearer the ocean), but are relatively sparse on the more landward portions of the upper beach. In fact, even during periods of peak beach use (*e.g.*, summer holidays), only 1% of beachgoers used the upper (landward) 20% of the beach, and 90% were present within the lower 60% of the beach. Thus, curtailment of raking and driving on the most landward portion of the upper beach will have minimal effect on the majority of beach users. Curtailment of beach raking in this area can also foster development of natural dune systems (Nordstrom *et al.* 2000, Cathcart and Melby 2009, Nordstrom *et al.* 2012), provide habitat to native pollinators like butterflies, result in cost-savings to beach managers, and diversify the range of recreational amenities available to beach-users (*i.e.*, some visitors enjoy experiencing a natural section of dry beach featuring native plants, shells, etc.). Based on the high value of the landward portion of upper beaches as dispersal corridors for rare plants and the low conflict with beach users in this zone, the Service recommends the following provisions be incorporated in all new and revised BMPs.

#### Within Protected Zones:

- Prohibit mechanical raking and scraping year-round, except as needed during a State of Emergency (SOE).
- Designate a “Plant Protection Strip,” consisting of approximately 25% of the total beach width, located immediately adjacent to the landward limit of the beach (*e.g.*, primary dune, boardwalk, bulkhead, etc.). Prohibit driving within the Plant Protection Strip year-round.
- Outside of the Plant Protection Strip, follow site-specific driving restrictions as specified in the BMP.



#### Within Precautionary Zones:

- Prohibit mechanical raking and scraping between March 15 and August 31, except as needed during an SOE. If no listed species are present by July 15, raking and scraping restrictions may be lifted, except within the Plant Protection Strip, as discussed below.
- Designate a Plant Protection Strip, consisting of approximately 25% of the total beach width, located immediately adjacent to the landward limit of the beach (e.g., primary dune, boardwalk, bulkhead, etc.). Eliminate driving and mechanical raking and scraping within the strip, preferably year round, but minimally from March 15 to November 30, except during an SOE.
- Outside of the Plant Protection Strip, follow site-specific driving restrictions as specified in the BMP.

#### Within Recreational Zones:

- Within each Recreational Zone, designate a “Plant Protection Strip,” consisting of approximately 10% of the total beach width, located immediately adjacent to the landward limit of the beach (e.g., primary dune, boardwalk, bulkhead, etc.). Eliminate driving and mechanical raking and scraping within the strip, preferentially year-round, but minimally from May 15 to November 30, except during an SOE.

#### For All Plant Protection Strips:

- Seasonally mark Plant Protection Strips with PVC posts and signs (but not rope or string). The Service can provide a limited number of signs.
- Conduct an annual meeting or training to educate beach rake and off-road vehicle operators about the need to stay out of the Plant Protection Strips.

### **Red Knot Protections**

The rufa red knot breeds in the tundra of the central Canadian Arctic and winters primarily in the southern tip of South America, northern Brazil, the Caribbean, and the southeastern and Gulf coasts of the U.S. Some of these robin-sized shorebirds fly more than 9,300 miles from south to north every spring and reverse the trip every autumn. Migrating red knots can complete non-stop flights of 1,500 miles or more, converging on vital stopover areas to rest and refuel along the way. Large flocks arrive along the Delaware Bay and New Jersey’s Atlantic coast each spring (May through June), in time to coincide with the spawning season for the horseshoe crab (*Limulus polyphemus*). Horseshoe crab eggs provide a rich, easily digestible food source for migrating birds. Mussel beds on New Jersey’s southern Atlantic coast are also an important food source for migrating red knots.

Red knots show moderate fidelity to stopover locations during fall migration (mid-July through November). Key foraging and roosting areas along New Jersey’s Atlantic coast are located primarily at unstabilized inlets (e.g., Stone Harbor Point, North Brigantine Natural Area), but also include several continuous beaches (e.g., Avalon, North Wildwood, Stone Harbor north of the Point). Consistently used stopovers typically feature intertidal sand flats that become exposed on a falling tide; however, red knots may also use other New Jersey beaches on a less consistent basis. In addition, small numbers of red knots may spend all or part of the winter in New Jersey.

The rufa red knot was federally listed as threatened on January 12, 2015. Threats to the red knot include sea level rise; coastal development; shoreline stabilization; dredging; reduced food availability at stopover areas; disturbance by vehicles, people, dogs, aircraft, and boats; and climate change (U.S. Fish and Wildlife Service 2014). For more information, visit [<http://www.fws.gov/northeast/redknot/>](http://www.fws.gov/northeast/redknot/).

In developing each new or revised BMP, the Service will use the best available data regarding red knot use in that municipality or jurisdiction and make conservation recommendations accordingly. In areas where documented red knot use is minimal (*e.g.*, only a few birds over the past 10 years), the Service will recommend only minimal conservation measures, such as educating beach management staff to avoid direct lines of travel through shorebird flocks. In areas of moderate or high red knot use, the Service may recommend additional conservation measures to manage habitat, predation and/or disturbance. Where red knot use areas overlap with habitat used by beach-nesting birds, few additional protections are likely to be necessary during the nesting season, but some measures may need to be extended through part or all of the fall months. All red knot conservation measures included in a final BMP will be developed cooperatively between the Service, ENSP, and the local beach managers, and will be tailored to site-specific conditions.

## **Conclusion**

Along with previously issued guidelines for managing fireworks and other recreational activities (U.S. Fish and Wildlife Service 1994, 1997), the Service expects the measures outlined above will provide necessary protections to aid recovery of listed beach species. The Service looks forward to continued coordination with local beach managers to accommodate recreational beach uses while also promoting stewardship of federally and State-listed endangered and threatened beach-dependent birds and plants.

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# Assessing the spatial compatibility of recreational activities with beach vegetation and wrack in New Jersey: Prospects for compromise management

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## ABSTRACT

This study examines the prospects for compromise management to support greater natural resources on recreational beaches by analyzing the spatial dimensions of key natural resource indicators (beach vegetation and wrack) with peak recreational uses in New Jersey, one of the most intensively developed shorelines in North America. The spatial distribution of pedestrian and vehicular recreational uses was measured on 60 transects in heavily-populated beaches during the peak times and days of use during the summer tourist season, and compared to that of vegetation and wrack on 72 transects in nearby protected natural areas. The frequency, density, and % use were calculated for each 10% increment of linear beach surface, and the impacts of protecting different amounts of upper beach areas were calculated in terms of the % vegetation, wrack and recreational use that would be supported in each case. Vegetation was highly concentrated in landward portions of the beach surface, and pedestrian and parked recreational vehicles in the seaward areas, suggesting high compatibility of these natural resources with recreational use. Lower compatibility was found for existing patterns of wrack and vehicle driving, which were more widely distributed across the beach surface. Based on the distributions of these variables, protecting the upper 50% of the beach would support >80% of vegetation, pedestrian and parked vehicular uses, and 42–52% of driving uses and wrack, respectively. Protecting the upper 25% of the beach would support >95% of all recreational uses, 52% of vegetation, and 24% of wrack. Given the current level of impacts to vegetation and wrack on recreational beaches, major gains in these and other natural resources can therefore be made across the shoreline without substantial impacts to existing pedestrian or vehicular recreational uses. Greater ecological benefits and ecosystem services may be obtained by applying these types of compromise management solutions to recreational ocean beaches in the future.

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## 1. Introduction

Human populations are highly concentrated in the coastal regions of the planet (Crossett et al., 2004; Small and Nicholls, 2003), and their uses of ocean shorelines place significant pressures on coastal natural resources. Recreational beach uses and associated management activities (e.g., beach cleaning, off-road vehicles) may severely damage or disrupt the structure and function of beach ecosystems, impacting beach flora and fauna, wrack, sediment, and beach topography, and the various biological and physical processes associated with them (Rickard et al., 1994; Watson et al.,

1996; Dugan et al., 2003; Schlacher and Thompson, 2008; Deidun et al., 2009; Dugan and Hubbard, 2010; Nordstrom et al., 2011; Roig-Munar et al., 2012; Kelly, 2014). Sustainable solutions are needed that balance recreational interests with natural resource concerns across the coastal landscape; i.e., reducing the environmental impacts of human activities while still respecting cultural and economic uses. This study examines the spatial distribution of recreational activities and upper beach habitat characteristics in New Jersey in order to determine the potential for satisfying both of these interests through compromise management solutions on recreational shorelines (Nordstrom, 2003).

Although effective conservation of all natural resource characteristics is impossible where intensive recreational uses of the beach surface occur (McLachlan et al., 2013), spatial variation in the

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concentration of those uses may provide a basis for establishing intermediate levels of protection. Most recreational activities (e.g., sunbathing, swimming, fishing), for example, are concentrated in the seaward portions of the beach surface (Watson et al., 1996; Valdemoro and Jimenez, 2006; Guillen et al., 2008), whereas many important habitat conditions are concentrated in the landward portions of the beach above the reach of high tides, such as beach plant communities, embryonic dunes, and shorebird and sea turtle nesting sites (Colwell et al., 2005; Maslo et al., 2010; NMFS and USFWS, 1991; Kelly, 2014). However, this balance of recreational and natural resources values is not typically achieved because of the broader impacts of beach maintenance and other activities peripheral to the primary recreational uses. In New Jersey, for example, vehicle driving and mechanical raking impact an average of 79% and 100% of the beach surface where they occur, respectively, translating into dramatic reductions and/or elimination of beach vegetation cover and wrack (Kelly, 2014). By changing the patterns of these uses and restricting them to the specific areas needed to support recreation, much greater areas of upper beach habitat might be protected throughout the shoreline at little or no cost or loss of recreational use.

Beach vegetation and wrack provide useful indicators of ecosystem integrity and natural resource values given their high visibility, their sensitivity to human impacts, and their integral relationships and/or spatial correlation with a variety of important shoreline patterns and processes, including sediment stabilization, dune development, and habitat for wildlife and endangered plant and animal species (Watson et al., 1996; Weakley et al., 1996; Dugan et al., 2003; Deidun et al., 2009; Maslo et al., 2010; Nordstrom et al., 2012; Kelly, 2013, 2014). Although it would not necessarily preserve all aspects of natural beach structure and function, protection of upper beach areas could result in substantial increases of natural resources and ecosystem services in recreational areas where little to none currently exists.

These concerns are especially relevant to developed coastlines, where human population pressures are greatest and the losses of natural shoreline features are most extreme. New Jersey, for example, has the highest population density in the United States and the highest coastal population density of any oceanfront state (Crossett et al., 2004). More than 20 million people live within 100 km of its shoreline, including the populations of nearby New York City and Philadelphia (U.S. Census Bureau, 2013). Tourism generates more than \$35 billion annually in New Jersey, the greatest portion coming from its coastal counties (Tourism Economics, 2013), where dense residential and commercial development allows for local populations to increase several-fold during the summer tourist season (Monmouth County Planning Department, 2008). As a result of these pressures, 70% of New Jersey beaches are currently impacted by intensive recreational uses and associated maintenance activities; 92% outside of the three largest protected areas (Island Beach State Park, Forsythe National Wildlife Refuge, and Sandy Hook) (Kelly, 2014).

Given the value of beach habitats for species conservation, dune development, and other ecosystem services described above, greater benefits to coastal communities could clearly be obtained by better integrating them on recreational beaches whenever possible. This study attempts to assess the spatial dimensions of recreational activities at their peak levels of use and compare them to beach vegetation and wrack in areas where these activities do not occur, in order to more clearly discern the degree to which these natural resources may be supported on recreational beaches. By focusing on periods of peak use during the summer tourist season in one of the most densely developed ocean shorelines in North America, this study should find broad applicability to other coastlines where these types of recreational activities occur at

similar or lower intensities.

## 2. Methods

The particular portions of the beach that were the focus of this study were the beach surface from the base of the foredune to the berm crest, where the beach angles more steeply toward the surf or foreshore, and includes both the supratidal and upper intertidal zones as identified by Godfrey and Godfrey (1981; Fig. 1). This area roughly corresponds to the backshore, upper beach, high beach or back beach areas described by other authors (Breden et al., 2001). In New Jersey, beach vegetation is typically restricted to areas above the reach of high tides, and consists primarily of pioneer plant communities dominated by sea rocket (*Cakile edentula*) and other annual species (e.g., *Salsola kali*, *Chamaecyfe polygonifolia*); identified by Breden et al. (2001) as the “*Cakile edentula* Sparse Vegetation Alliance.” Numerous other synonyms exist for these plant communities, typically referring to their location or functional relations to dune development and/or wrack deposits (Kelly, 2014). Dune vegetation, dominated by American beachgrass (*Ammophila breviligulata*) and other perennial species is also mixed with the beach vegetation described above in many situations, indicating the lateral expansion of the adjacent dunes or development of incipient dunes on the beach surface, but was not differentiated in this study.

Data on vegetation, wrack, and recreational use patterns were collected on transects in representative portions of the 209-km state shoreline from 2003 to 2005 (Fig. 2). Transects were arranged perpendicular to the coastline, with the zero point positioned at the berm crest and extending inland to the base of the foredune or other structure delimiting the end of the beach. The positions of any wrack and beach vegetation occurring within 25 m to either side of the transect line (effectively amounting to a belt transect 50 m wide) were recorded in terms of distance from the berm crest when present/identifiable. Transects were spaced an average of 500 m apart within each of the respective areas. Qualitative confirmation of the generality of these patterns in other areas and years in New Jersey was made during annual surveys of the entire state shoreline for rare beach plant species from 2001 to 2014 (Kelly, 2013, 2014).

Data on the spatial distribution of vegetation and wrack were collected on 72 transects in protected natural areas in all four coastal counties (Monmouth, Ocean, Atlantic, Cape May) in 2004–2005 (Fig. 2). Surveys of recreational beach activities were collected on peak times and days in the tourist season in 2003–2004, among the most heavily utilized portions of the coastline in order to effectively document the maximum levels of use taking place on these beaches (i.e., when and where the least area of unused beaches were likely to occur). These included major holidays (Independence Day – July 4th, Labor Day – 1st Monday in September) and other weekends from late June through August for pedestrians, and through early October for vehicles, when the weather was sunny and warm, between 10 AM and 3 PM. Surveys of pedestrian uses were conducted along 33 transects in the following major tourist destinations: Ocean Grove, Bradley Beach, Avon-by-the-Sea, Point Pleasant, Seaside Heights, Seaside Park, Island Beach State Park, Ship Bottom, and Beach Haven (Fig. 2). Transects were spaced an average of 500 m apart, with two or three located in each locality, and surveys taking place on multiple dates in the first four locations. Transects were placed in the most populated pedestrian areas occurring within each of these locations, and were positioned in the same manner as the vegetation transects above. The number of beachgoers were scanned and recorded for each segment of the beach surface, including all people occurring within 25 m to either side of the transect line. The number of people below

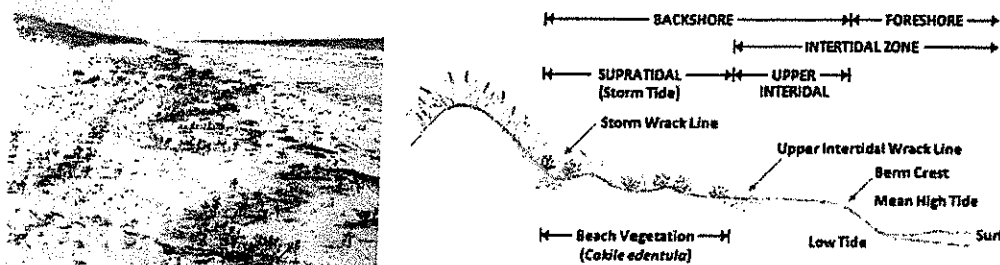


Fig. 1. Locations of beach vegetation and wrack lines in relation to tidal zones and beach topography (diagram adapted from Godfrey and Godfrey, 1981; Kelly, 2014). Picture taken in Northern Natural Area at Island Beach State Park, NJ.

the zero point (i.e., in the surf, water, or sand below the berm crest) were also tallied.

Data on the spatial extent of recreational off-road vehicle use were collected during peak days of the tourist season in 2004–2005, in each area of the coastline in which these activities occur during the growing season, including Island Beach State Park, Brigantine City, and Brigantine Natural Area. The length of shoreline represented by these areas is approximately 8.6 miles (Island Beach State Park), 4.6 miles (Brigantine Natural Area), and 0.8 miles (Brigantine City), amounting to a total of approximately 11% of the New Jersey coastline. Survey areas were broken down into sections for data collection, including South of Gillikin's Access, South of Access 7 (A-7), South of A-15, and South of A-23 in Island Beach State Park; South of Bulkheads, North of Bulkheads, and Accreting Island Tip in Brigantine Natural Area, and Ocean Beach and Inlet Beach in Brigantine City. Data was collected by driving on the beach in each section and counting the number of vehicles occurring in each segment of the beach surface in either direction from the berm crest (negative values towards the water, positive towards the dunes). Vehicles were tallied separately according to whether they were parked or driving.

Data from both pedestrian and ORV transects were analyzed in terms of 1) the percent frequency of beaches occupied, 2) the density of pedestrians/vehicles per ha and 3) percentage of total pedestrians/vehicles occurring along the beach surface (% use). In order to allow for quantitative comparisons between beaches of different width, the data from each transect were converted 10% increments of beach width before calculating % use. Statistical comparisons were made in SAS-JMP 9.0 (SAS, 2010), using non-parametric Kruskal–Wallis tests of Wilcoxon Ranks at 0.95 confidence intervals. The data were then summarized in terms of 90%, 75% and 50% use in each category and compared to similar summaries of vegetation and wrack (% frequency) occurring on beaches undisturbed by human land uses, from the 72 vegetation/wrack transects described above. Different compromise management scenarios were then analyzed in terms of the amount of vegetation, wrack and recreational uses maintained in scenarios protecting 10%, 25%, 50%, 75% and 90% of the back beach.

### 3. Results

A total of 7814 pedestrians were counted on 33 transects in 9 municipalities, ranging from 59 to 540 per transect, and densities at an average of 5.9/100 m<sup>2</sup> and a maximum of 22/100 m<sup>2</sup> (Table 1). Recreational pedestrian uses tended to increase gradually with proximity to the water, resulting in significant differences between individual beach segments ( $X^2 = 252.075$ ,  $df = 1$ ,  $p < 0.0001^*$ ), as well as the seaward and landward halves of the beach ( $X^2 = 199.7934$ ,  $df = 1$ ,  $p < 0.0001^*$ ) (see Figs. 3, 4 and 6).

Pedestrians were present in most beach segments on all beaches studied, ranging from 60% of beaches in the landward limits to 100% of beach segments closest to the water (Fig. 4). Average densities of pedestrians in the 10% of beach surface immediately above the berm crest were 1366/ha ( $\pm 229$  SE) compared to 91/ha ( $\pm 26$ ) in the 10% of the beach closest to the dune (Fig. 5). Individual sites ranged as high as 7902 pedestrians/ha in the seaward 10% of beach, or 4.5 m<sup>2</sup>/user. In terms of % use, areas nearest the water experienced 10–20× greater use on average than landward beach segments, with 18–19% in the 10% of beach to either side of the berm crest, to 1% in the back 20% of beach (Fig. 4).

A total of 861 vehicles were counted on 27 surveys of 10 beach segments in three public parks, with an average of 158 vehicles observed in each park survey (Table 2). Segments surveyed within each park varied from 0.5 to 3.0 km in length, and contained densities with an average of 39.7 vehicles/km and a maximum of 126/km. Parked recreational off-road vehicles were highly concentrated in areas closest to the water compared to the back of the beach ( $X^2 = 179.8704$ ,  $df = 10$ ,  $p < 0.0001^*$ ) (see Figs. 3, 4 and 6). Fewer than 10% of beaches studied contained any parked vehicles in the back 50% of the beach surface at all, compared to  $\geq 97\%$  in the seaward 20% of beach surface (Fig. 4). Densities of parked vehicles ranged from an average of 0.2/ha ( $\pm 0.2$ ) in the back 10% of the beach to 18.0/ha ( $\pm 4.4$ ) in the seaward 10% of the beach, and exhibited % increment densities as high as 80.4/ha (Brigantine City). In terms of % use, the landward beach segments each averaged less than 1% use ( $\pm 0.2$ ) compared to 41% ( $\pm 3.8$ ) in segments in the seaward half of the beach (i.e., closest to the berm crest). In general, vehicles were only parked in the back of the beach in 6% of surveyed segments, typically at trail heads or stuck in the sand. These represented  $< 1\%$  of the total number of vehicles counted.

Patterns of vehicles driving on beaches were more variable overall, and exhibited much lower densities than other uses studied (Fig. 4). The majority of driving vehicles occurring in the landward 10% of beach, decreasing towards the center of the beach, and increasing again on the harder sand occurring below the berm crest. 32–44% of beaches studied had vehicles driving in the landward 30% of beach surface, compared to 4–16% in other beach areas. Densities of driving vehicles were much lower than parked, with an average of 0.8 vehicles/segment at the back 10% of the beach, 0.5/segment immediately above the berm crest, 1.0/segment below the berm crest, and no more than 18 driving vehicles observed at any location. In terms of % use, 15–28% of use occurred in the landward 30% of beach and 6–17% was located in the 10% to either side of the berm crest. The remainder each contained  $\leq 5\%$  of use.

Comparing the above land uses to % frequency of beach vegetation and wrack in different areas of the beach surface (Figs. 4 and 5), there appeared to be significant potential for supporting these

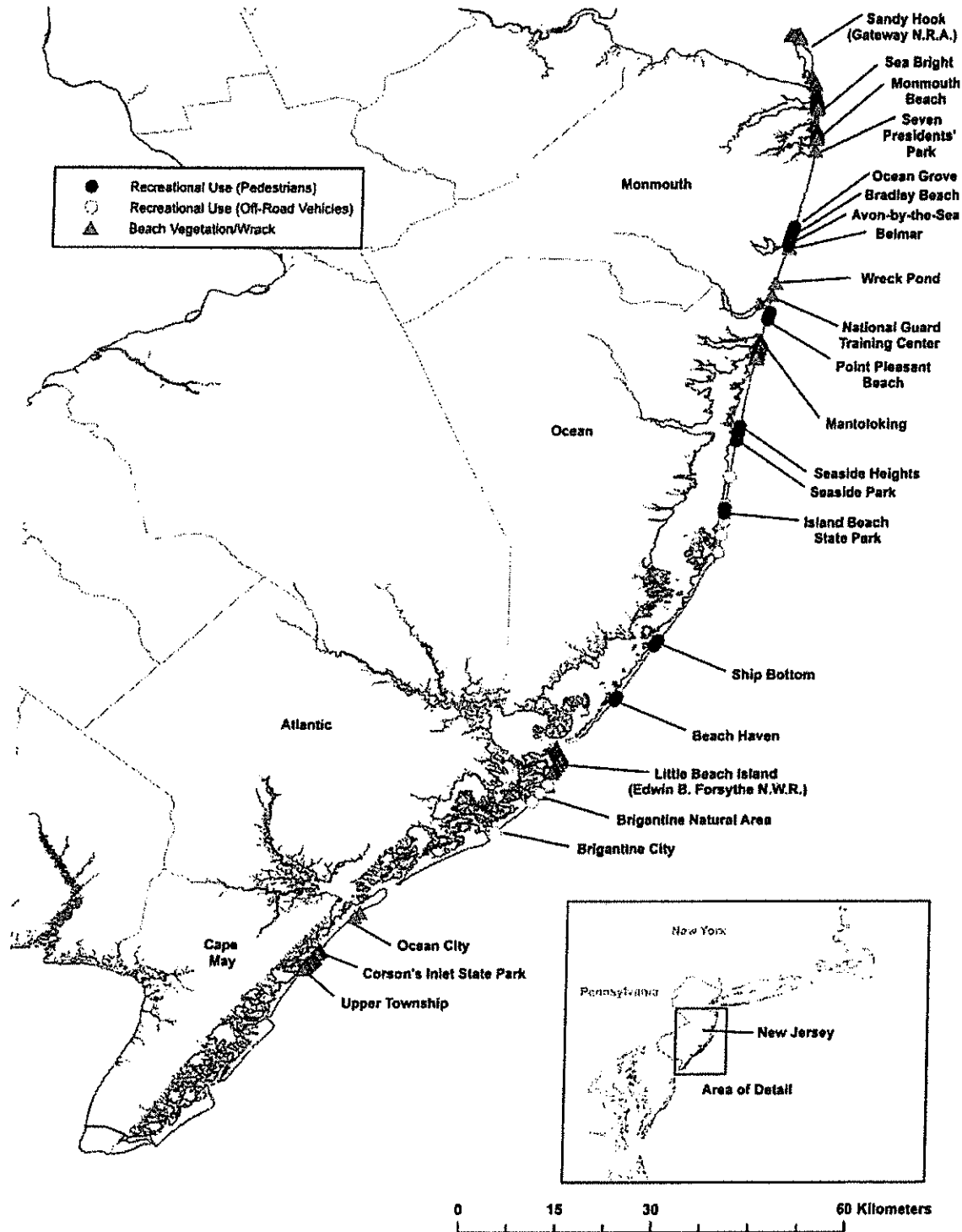


Fig. 2. Locations of study sites on the New Jersey ocean shoreline. Locations of transects on pedestrian beaches ( $n = 33$ ) are depicted by black circles, off-road vehicles by gray circles ( $n = 27$ ), and protected areas where vegetation and wrack were measured ( $n = 72$ ) in dark gray triangles.

beach habitat features without significantly impinging upon existing recreational uses. Overall, 90% of beach vegetation was contained in the landward 57% of the beach surface, 75% in the landward 39%, and 50% in the landward 24%. Wrack was more uniformly distributed across the beach surface, with 50% of wrack occurring in the landward 49% of beach surface, 75% in the landward 76% and 90% in the landward 99%. For human land uses, 90%

was contained in the seaward 60% for pedestrians and 29% for parked vehicles, 75% occurred in the seaward 41% (pedestrians) and 17% (parked vehicles) and 50% was located in the seaward 30% and 9%, respectively.

In terms of compromise management scenarios between these natural resources and human uses, protection of 50% of the landward beach surface would protect 85% of vegetation and 52% of



Table 1

Summary results of pedestrian abundance and density per transect during periods of peak use in New Jersey. Beach width is average per transect, measured from berm crest to base of dune or boardwalk. Density data includes average per transect, and maximum per 10% increment of beach width.

| Study sites             | #<br>Surveys | Beach<br>Width (m) | Abundance (#/transect) |       |     |     | Density (#/100 m <sup>2</sup> ) |      |
|-------------------------|--------------|--------------------|------------------------|-------|-----|-----|---------------------------------|------|
|                         |              |                    | Total                  | Avg   | Min | Max | Avg                             | Max  |
| Ocean Grove             | 4            | 55.5               | 577                    | 144   | 80  | 211 | 3.5                             | 9.8  |
| Bradley Beach           | 7            | 72.1               | 1116                   | 159   | 59  | 298 | 3.2                             | 18.6 |
| Avon-by-the-Sea         | 6            | 69                 | 1600                   | 267   | 102 | 482 | 5.8                             | 22   |
| Point Pleasant          | 3            | 121.7              | 1370                   | 457   | 397 | 540 | 6.4                             | 15.2 |
| Seaside Heights         | 2            | 75                 | 670                    | 335   | 292 | 378 | 7.1                             | 13.2 |
| Seaside Park            | 2            | 66                 | 417                    | 209   | 153 | 264 | 4.6                             | 13.6 |
| Island Beach State Park | 3            | 54                 | 851                    | 284   | 256 | 318 | 7.4                             | 14   |
| Ship Bottom             | 3            | 34.3               | 538                    | 179   | 129 | 252 | 6.3                             | 14.6 |
| Beach Haven             | 3            | 29.3               | 675                    | 225   | 161 | 282 | 9                               | 16   |
| Total                   | 33           | 66.0               | 7814                   | 250.9 | 59  | 540 | 5.9                             | 22   |

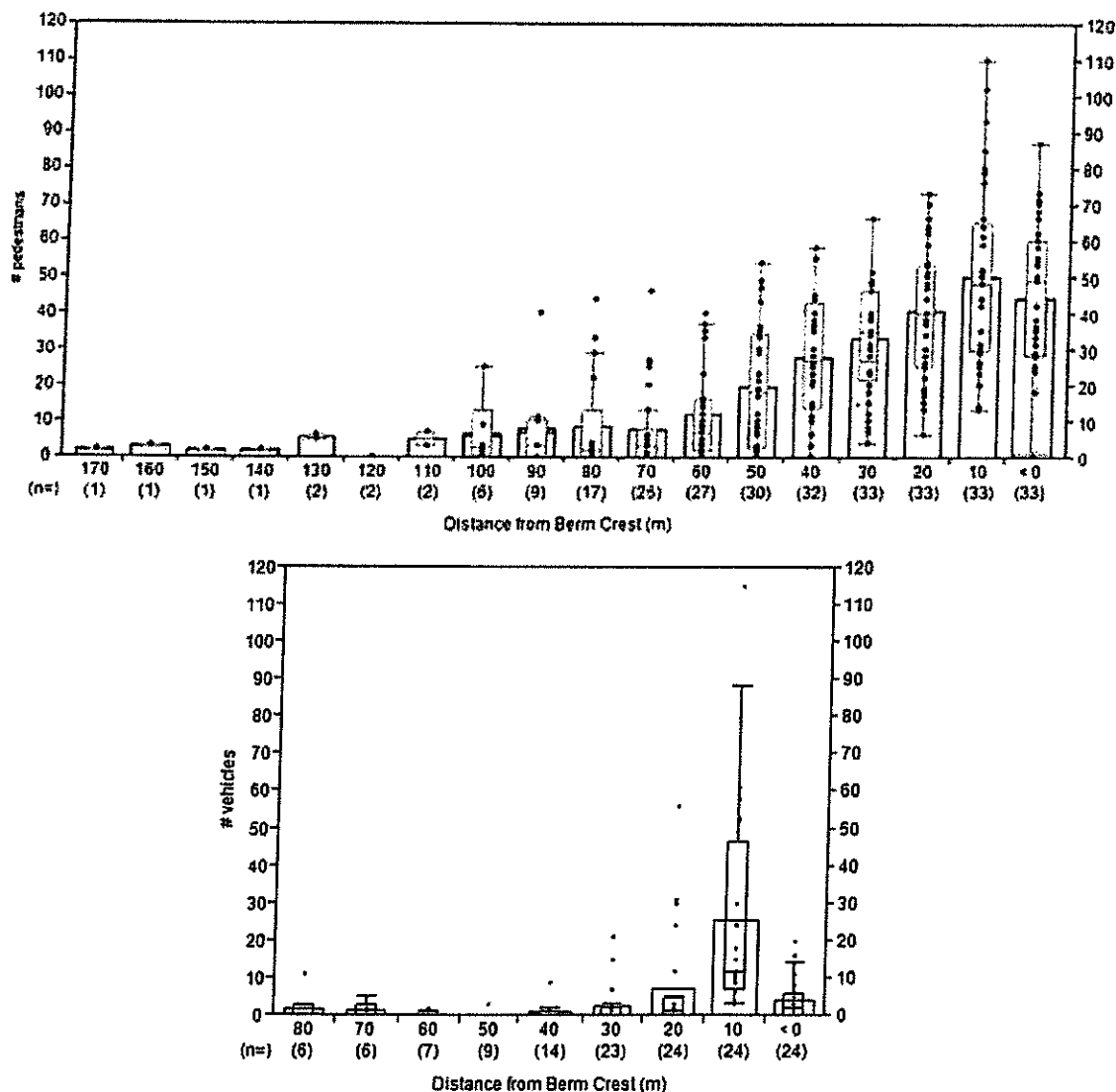


Fig. 3. Spatial distribution of recreational pedestrian (top) and vehicular (bottom) uses on transects in New Jersey. Data were collected at 10 m increments starting at the berm crest ( $x = 0$ ) to foot of dune. Given variation in beach width between sites, the number of transects ( $n$ ) where data were collected is shown in parentheses for each increment width.

wrack, while still maintaining 83% of pedestrian use and 97% of parked vehicle uses to continue (Table 3). Only driving vehicles presented major conflicts with beach habitat recovery goals, with 90% of use contained in the seaward 91% of beaches, 75% in the

seaward 81%, and 50% in the seaward 62%. Although protection of 50% of the beach surface would only be sufficient to maintain 42% of existing driving areas, this scenarios would still leave sufficient room needed for vehicles to drive (i.e., a minimum of two lanes

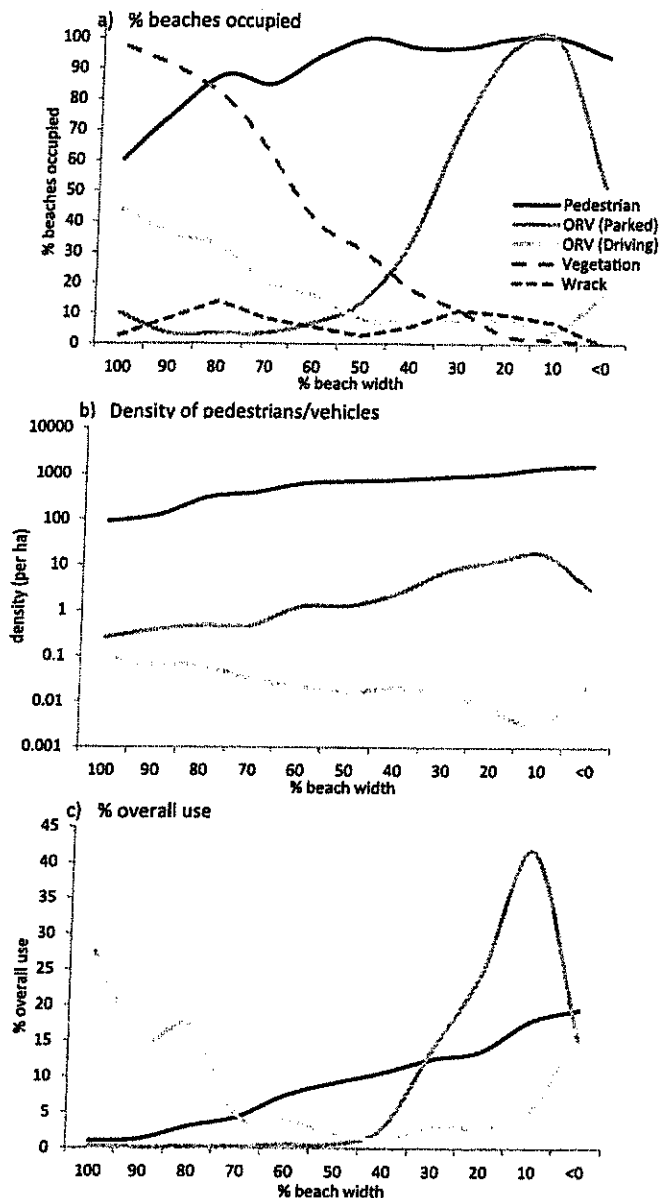


Fig. 4. Spatial distribution of recreational uses, vegetation and wrack on the beach surface. Distributional patterns are associated with % segments of beach width, with 0% at the berm crest, the landward limits at 100% and the surf at <10%. Graphs indicate % beaches occupied (top), density of pedestrians/vehicles (middle), and % use by pedestrians/vehicles (bottom).

adjacent to where vehicles are parked) on most beaches, suggesting much greater degrees of potential compatibility if accompanied by changes in driving behavior.

#### 4. Discussion

This study found a high degree of spatial compatibility of beach vegetation, wrack and recreational activities on ocean beaches, confirming the potential for compromise management to support greater natural resources on recreational shorelines (Nordstrom, 2003). Although beach raking operations and driving ORVs impact the entire surface of most recreational beaches (Kelly, 2014), the recreational activities themselves (sunbathing, parked vehicles, fishing, etc.) were highly concentrated on the lower beach surface, even at the maximum levels of use observed at the peak of the tourist season. The spatial extent of current human impacts to beaches in New Jersey therefore do not appear to reflect the actual needs for recreation, and restrictions limiting vehicular and other incompatible human activities to the lower beach surface could result in substantial improvements to the environmental quality of upper beach areas without impacting recreational beach uses. Given the concentration of beach vegetation and wrack in upper beach areas, the protection of the back half of the beach surface, for example, would allow for 83–97% of recreational uses to be supported along with 85% of potential vegetation and 52% of wrack. Protecting the back quarter of the beach, alternatively, would allow for >95% of recreational uses, and still the majority of vegetation and a quarter of wrack. Because the data were collected in areas and times of peak population densities, even greater room for habitat protections likely exists in other areas and/or times of year where lower levels of use occur. Even within the most populated areas studied, for example, the intensity of recreational beach use decreased rapidly at greater distances from beach accesses, life-guard stations, and/or parking, commercial or township centers.

Comparisons to other studies suggest that these findings may be broadly applicable to many other parts of the world. Similar distributions and/or densities of pedestrians and vehicles were documented in Brazil (de Araujo and da Costa, 2008; Silva et al., 2011), South Africa (Watson et al., 1996; de Ruyck et al., 1997), Spain (Valdemoro and Jimenez, 2006; Jurado et al., 2009; Guillén et al., 2008), and Australia (Schlacher and Thompson, 2008), suggesting not only the generality of these recreational spatial patterns, but the potential global scope of upper beach habitat protections that may be achieved through compromise management. Exceptions may exist in particular areas where spatial "saturation" of users across the beach surface is known to occur (Guillén et al., 2008), or other types of recreational uses that are concentrated in the upper beach (e.g., camping), both of which

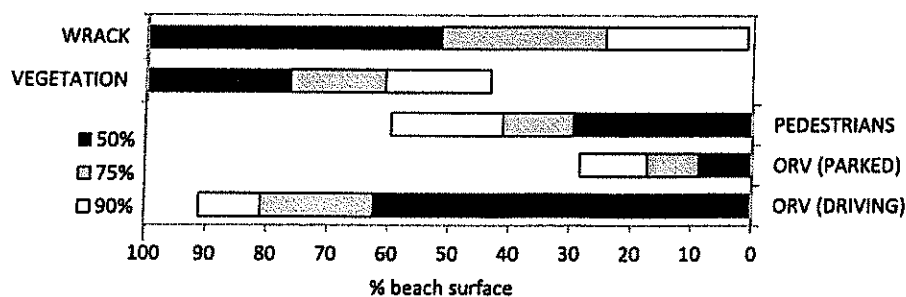


Fig. 5. Spatial distribution of vegetation and wrack percentage classes compared to recreational uses. Chart depicts percentage classes of wrack, vegetation and recreational use along percent width of the beach surface, from the berm crest ( $x = 0$ ) to the landward limits ( $x = 100$ ). Graphs indicate % beaches occupied for vegetation and wrack and % use by pedestrians/vehicles.

**Table 2**

Summary results of vehicle abundance and density per transect during periods of peak use in New Jersey. Beach width is average per length of shoreline surveyed, measured from berm crest to base of dune. Density data includes average per transect, and maximum per 10% increment of beach width.

| Study site               | # Surveys | Avg beach Width (m) | Beach Length (km) | Abundance (#/transect) |              |             |              | Density (#/km) |              |
|--------------------------|-----------|---------------------|-------------------|------------------------|--------------|-------------|--------------|----------------|--------------|
|                          |           |                     |                   | Total                  | Avg          | Min         | Max          | Avg            | Max          |
| Island Beach State Park: | 6         | 64.6                | 8.2               | 471                    | 118          | 37          | 265          | 14.3           | 32.2         |
| South of Gillikin's      | 4         | 30.7                | 1.8               | 43                     | 11           | 7           | 14           | 6.0            | 7.8          |
| South of A7              | 4         | 30.8                | 1.3               | 125                    | 31           | 11          | 78           | 23.7           | 59.1         |
| South of A14             | 4         | 35.6                | 3                 | 88                     | 22           | 7           | 42           | 7.3            | 14.0         |
| South of A23             | 5         | 64.6                | 1.6               | 218                    | 44           | 14          | 82           | 26.9           | 50.6         |
| Inlet Beach              | 3         | 92                  | 0.5               | 95                     | 48           | 32          | 63           | 95.0           | 126.0        |
| Brigantine Natural Area: | 2         | 76.3                | 4.7               | 69                     | 35           | 19          | 50           | 7.3            | 10.6         |
| Inlet Beach              | 1         | 195.5               | 1.3               | 19                     | 19           | 19          | 19           | 14.3           | 14.3         |
| North of Bulkhead        | 1         | 18.4                | 1.4               | 10                     | 10           | 10          | 10           | 6.9            | 6.9          |
| South of Bulkhead        | 1         | 44.2                | 2.0               | 21                     | 21           | 21          | 21           | 10.8           | 10.8         |
| Brigantine City:         | 1         | 59                  | 3.0               | 321                    | 321          | 321         | 321          | 105.9          | 105.9        |
| Ocean Beach              | 1         | 85                  | 1.8               | 215                    | 215          | 215         | 215          | 119.4          | 119.4        |
| Inlet Beach              | 1         | 33                  | 1.2               | 106                    | 106          | 106         | 106          | 86.2           | 86.2         |
| <b>Total</b>             | <b>27</b> | <b>66.6</b>         | <b>16.0</b>       | <b>861</b>             | <b>157.8</b> | <b>19.0</b> | <b>321.0</b> | <b>40.3</b>    | <b>126.0</b> |

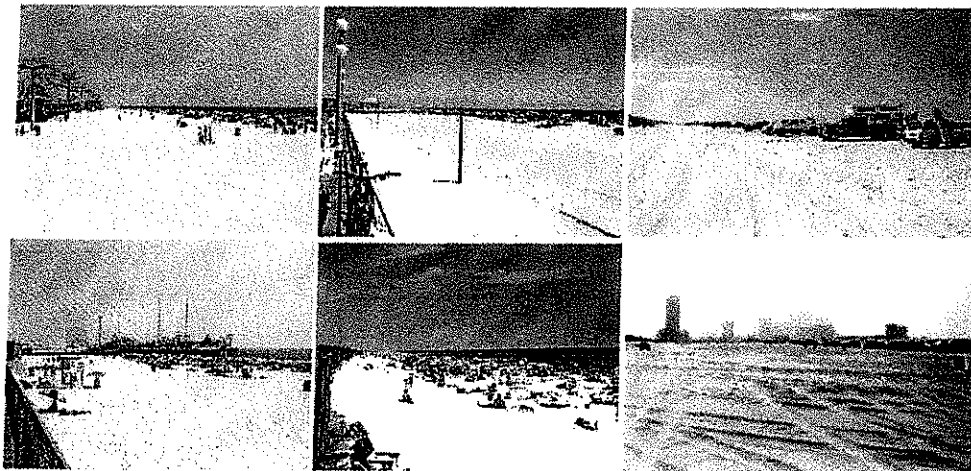


Fig. 6. Spatial patterns of pedestrian and vehicular recreational beach use on beaches in New Jersey. Photos indicate the concentration of recreational users near ocean, and absence of vegetation and wrack on upper beach due to beach raking and vehicle driving. Photos taken on major holidays during summer tourist season (Labor Day Weekend, Independence Day); locations include (top to bottom, left to right): Seaside Heights (2), Bradley Beach, Ship Bottom, Island Beach State Park, Brigantine City (Note: image orientation altered in some cases to provide equivalent perspective from left to right).

**Table 3**

Effects of protecting different areas of upper beach surface on vegetation, wrack and recreational use. Results are calculated in terms of % frequency (vegetation, wrack) and % use (pedestrian, ORV) that is maintained on average with each % area of beach protected, starting with 10% beach area farthest from the berm crest.

| Type of use      | % Upper beach protected |      |      |      |      |
|------------------|-------------------------|------|------|------|------|
|                  | 10%                     | 25%  | 50%  | 75%  | 90%  |
| % use maintained |                         |      |      |      |      |
| Vegetation       | 22.4                    | 52.4 | 85.3 | 98.3 | 99.7 |
| Wrack            | 3.7                     | 24.1 | 51.9 | 70.4 | 90.7 |
| Pedestrian       | 99                      | 96.2 | 83   | 57.2 | 37.2 |
| ORV (parked)     | 98.4                    | 98.1 | 97.4 | 39.5 | 38.9 |
| ORV (driving)    | 81.5                    | 58.9 | 42   | 10.7 | 1.4  |

would present less favorable conditions for the types of compromise management discussed here. Saturation may occur during special events in some locations in New Jersey as well (e.g., tournaments, concerts, festivals), but such patterns were not observed in this study and do not appear to be typical of current levels of peak recreational use across the shoreline as a whole. Regional approaches to shoreline management could also provide the flexibility needed to accommodate such high, local levels of use, by

reducing protections in specific areas needed to avoid conflicts with users while increasing protections in other areas that are less heavily utilized.

Based on the spatial patterns of pedestrian use observed in several studies, fixed areas of beach width may provide useful thresholds for deciding whether or which compromise management scenarios are appropriate for a particular beach. Silva et al. (2008), for example, observed that most pedestrians used beach areas <40 m from the water, and Valderrama and Jimenez (2006) reported the combined active and resting areas to be 30 or 40 m from the water depending upon whether beaches were less than or greater than 50 m wide, respectively. Although decreasing landward concentrations in use were observed in this study regardless of beach width, relatively higher concentrations of users were observed on landward portions of narrower beaches compared to wider ones, suggesting an increased potential for conflict between recreation and habitat protections on narrower beaches. This combined with the decreased area of potential habitat on narrow beaches suggests beaches <40 m wide may be less desirable and/or viable targets for compromise management.

Specific thresholds of beach width are also likely to be relevant

for management of beaches used by recreational ORVs, as a more or less fixed area is needed to support both parking and driving lanes, depending upon local beach topography and accordant exposure to tides. In order to reduce ORV impacts to sensitive beach areas, for example, Cape Hatteras National Seashore requires parking as close as possible to the water and no more than one car deep, with sign posts clearly indicating the landward extent of where vehicles should be located (National Park Service, 2012). Similarly, sign posts installed at Island Beach State Park, New Jersey, protect approximately 25–35% of the upper beach surface from off road vehicles on average, tapering protected areas according to beach width in order to allow sufficient room for vehicles to pass during high water events (Fig. 7, Kelly unpublished data). By installing these symbolic enclosures prior to the beginning of the tourist season and simply moving the locations of established vehicle paths seaward, away from sensitive upper beach areas, protections were achieved without any discernible detriment to use. With drivers cooperating and following the newly established boundaries, beach vegetation and habitat quality were able to recover in the very same year, due entirely to the effective return of natural shoreline processes. This included the successful colonization by two globally rare plant species (*Amaranthus pumilus*, *Polygonum glaucum*) that were the primary target of these efforts, as well as nesting attempts by several rare shorebird species (*Charadrius melodus*, *Haematopus pallidus*) (Kelly unpubl. data).

The opportunity for compromise management to support improvements in environmental quality on upper beaches is not the same for all habitat characteristics, however. While the results showed beach vegetation to be spatially compatible with recreational uses, this was less the case for wrack, which was not as highly concentrated in landward areas. Where maximal protections of both vegetation and wrack are desired and feasible, the drift line itself should be used to delineate protection areas, rather than a fixed percentage of the beach surface, since it demarcates the natural limits of the supratidal zone where these features are generally located (Leatherman and Godfrey, 1979). Doing so would result in the greatest gains for vegetation, wrack, and other habitat features related to them, such as invertebrate assemblages and foraging habitat for some shorebird species (Dugan et al., 2003; Deidun et al., 2009; Defeo et al., 2009). Even with complete protection of upper beach vegetation and wrack, however, continuation of recreational uses in adjacent areas could still result in negative impacts for a variety of wildlife, including increased rates of nest abandonment, stress, and/or mortality for nesting and staging shorebirds (Melvin et al., 1994; Hecht et al., 1996; Watson et al., 1996; Cohen et al., 2010). In areas where sea turtles are nesting, vehicle ruts in the lower beach would impede movement of hatchlings to the water, even if the nests themselves were not

directly impacted (Hosier et al., 1981; NMFS and USFWS, 1991). In such situations, other adaptive management strategies such as seasonal beach closures or other restrictions are more likely to yield appropriate levels of protection (Watson et al., 1996; Burger et al., 2004; National Park Service, 2012), but may also result in greater conflicts with recreational uses.

Despite these limitations, the intermediate levels of natural resource protections offered by compromise management scenarios could greatly enhance the quality, area and connectivity of beach habitats on recreational beaches. With 70% of the New Jersey ocean shoreline impacted by intensive recreational use and management, the isolated and/or small fragments of habitat that remain are insufficient to maintain regional species populations in the long-term given the dynamic nature of the shoreline environment, where local populations are regularly destroyed by the force of winds and waves (Weakley et al., 1996; Kelly, 2013). Protecting the upper half of the beach surface would increase vegetation cover and wrack by several orders of magnitude above existing levels on recreational beaches either mechanically raked for pedestrian use or subject to year-round recreational off-road vehicles (Kelly, 2014). In doing so, compromise management would not only enhance the ability of local areas to support rare flora and fauna, but would provide valuable habitat corridors between larger established preserves, enhancing persistence of rare species assemblages at the regional level. With the return of vegetation and wrack, these protected areas of the beach surface would also be expected to substantially recover and retain the patterns of biogeochemical cycling, macroinvertebrate assemblages, and other ecological factors that are important for sustaining both terrestrial and marine intertidal food webs (McLachlan and Brown, 2006).

In addition to increasing the value of beach habitats for species conservation, these natural resources also offer other economic benefits through erosion control and shoreline protection. Beach vegetation and wrack bind and accumulate sediments and facilitate the natural development of dunes, which buffer coastal communities from the effects of storms. Human activities such as mechanical raking, off-road vehicle use, and concentrated foot traffic not only damage or eliminate vegetation and wrack (Leatherman and Godfrey 1979; Godfrey and Godfrey, 1981; Kelly, 2014), but also destabilize sediments and increase their susceptibility to displacement and erosion (Schlacher and Thompson, 2008; Nordstrom et al., 2012). In addition to the continual investments in beach replenishment, dune vegetation plantings and sand fencing for shoreline protection (Speybroeck et al., 2006; Nordstrom et al., 2011, 2012), considerable long-term savings could conceivably be made by incorporating natural shoreline elements that also support these interests through protection of the upper beach areas where they occur (Nordstrom et al., 2011, 2012;



Fig. 7. Successful compromise management of beach vegetation and recreational vehicle uses at Island Beach State Park, NJ. Symbolic string-and-post fencing installed to protect upper beach habitats since 2008, allowing beach vegetation and other habitat characteristics to recover while allowing sufficient room for 100% of recreational vehicle uses. Photos show beach conditions before (left) and after (right) fencing.

Kelly, 2014). This is especially the case for New Jersey, where more money has been spent on shoreline stabilization than in any other state (Valverde et al., 1999) and where record amounts are currently being spent on reconstruction in the wake of Hurricane Sandy in 2012.

The extensive body of research on the human impacts to beach ecosystems clearly demonstrates that activities associated with recreational uses (e.g., mechanical beach raking and ORVs) result in substantial adverse impacts to the natural functioning of beaches and beach–dune interactions when these activities occur landward of the drift or wrack line (Leatherman and Godfrey, 1979; Dugan and Hubbard, 2010; Kelly, 2014). The clear potential for balancing natural resources and recreational uses demonstrated in this study of one of the most developed and intensively used coastlines in the world suggests that compromise solutions for sustainable shoreline management are likely to be feasible in a wide range of sandy coastlines in the future.

### Acknowledgments

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## Fwd: Best Day Foundation

Bob Santanello <[bsantanello@comcast.net](mailto:bsantanello@comcast.net)>

Mon 1/22/2018 2:03 PM

To: Stephen Reid <[sreid@pointbeach.org](mailto:sreid@pointbeach.org)>;

Hi Steve-

See below.

Are you comfortable saying Risdens even though you haven't had the chance to speak to them?

Bob

Begin forwarded message:

From: Patrick Cavanaugh <[patrick.cavanaugh@pointbeach.org](mailto:patrick.cavanaugh@pointbeach.org)>  
Date: January 22, 2018 at 2:00:04 PM EST  
To: Bob Santanello <[bsantanello@comcast.net](mailto:bsantanello@comcast.net)>  
Subject: Re: Best Day Foundation

Bob,

I just spoke with the Best Day people and they are ready to develop a flier for posting locally and on their website. We just need to confirm that the dates are July 7th and 8th. Also, have we confirmed the exact location? I couldn't recall.

Thanks,  
Patrick Cavanaugh

On Wed, Nov 8, 2017 at 9:32 AM, Bob Santanello <[bsantanello@comcast.net](mailto:bsantanello@comcast.net)> wrote:

Hi Pat-

I'll get the Mayor on this date to secure approvals.

Thanks-

Bob

From: Patrick Cavanaugh [mailto:[patrick.cavanaugh@pointbeach.org](mailto:patrick.cavanaugh@pointbeach.org)]  
Sent: Wednesday, November 8, 2017 8:22 AM

2/7/2019

Fwd: Best Day Foundation - Stephen Reid

To: Robert Santanello <[bsantanello@pointbeach.org](mailto:bsantanello@pointbeach.org)>  
Subject: Best Day Foundation

Bob,

Alexis from Best Day reached out to me and they would like to schedule their event in town for July 7th and July 8th. Please let me know if there is anything I need to do in order to facilitate.

Thanks,

Patrick Cavanaugh

# NRTAC Annual Meeting

Seth Sloan <[REDACTED]>

Mon 1/14/2019 8:21 AM

To: PPB-Toby Wolf-Jenks <toby\_wolf@jenkinsons.com>;

Cc: Stephen Reid <sreid@pointbeach.org>; sreidassoc@yahoo.com <sreidassoc@yahoo.com>; Councilman Bob Santanello <bsantanello@comcast.net>; Robert Santanello <bsantanello@pointbeach.org>; Seth Sloan <[REDACTED]>; PPB-Ed McGlynn-Jenks <[REDACTED]>;

Hi

The committee would like you to speak at the 7th Annual meeting on Saturday, June 8, 2019 from 10-12 at The Antrim School.

You received great reviews as usual last year.

Are you available?

Sent from my iPhone



# Fwd: NRTAC meeting suggestion

Seth Sloan <[REDACTED]>

Sat 6/30/2018 9:42 AM

To: sreidassoc@yahoo.com <sreidassoc@yahoo.com>; Stephen Reid <sreid@pointbeach.org>;

Cc: Seth Sloan <[REDACTED]>;

Sent from my iPhone

Begin forwarded message:

From: Seth Sloan <[REDACTED]>

Date: June 29, 2018 at 1:12:29 PM EDT

To: Toby Wolf <[toby\\_wolf@jenkinsons.com](mailto:toby_wolf@jenkinsons.com)>

Cc: PPB-Ed McGlynn-Jenks <[REDACTED]>

Subject: Re: NRTAC meeting suggestion

The sculptures in 2013 were sensational, hope it works in the future.

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On Jun 29, 2018, at 10:17 AM, Toby Wolf <[toby\\_wolf@jenkinsons.com](mailto:toby_wolf@jenkinsons.com)> wrote:

Hi Seth-

This is something we have been wanting to do for years. One of the biggest problems we have had is that the experts have told us our sand isn't ideal for sand sculptures. I am sure you remember the Sandy Castle from 2013.

The sand used for that castle actually had to be trucked in to make the castle then removed when the castle was deconstructed. I believe they also had to get special permission from either the DEP or EPA to do this. Ed might have more info on that.

Before the 2017 season we were in talks with a few local sculptors about ways we could potentially do this. One idea was that they would bring in table tops and put them on the boardwalk and do smaller sculptures with again, outside sand. The costs were beyond what our budget allowed.

If we learn of a way to do one it is an event that has always been on our radar.

-Toby

-----Original Message-----

From: Seth Sloan <[REDACTED]>

Sent: Friday, June 29, 2018 9:59 AM

To: PPB-Toby Wolf-Jenks <[toby\\_wolf@jenkinsons.com](mailto:toby_wolf@jenkinsons.com)>; PPB-Ed McGlynn-Jenks

<[REDACTED]>

Cc: Seth Sloan <[sk\[REDACTED\]@jenkinsons.com](mailto:sk[REDACTED]@jenkinsons.com)>

Subject: NRTAC meeting suggestion

In the survey filled out by an attendee, they asked if Jenks could have a sand sculpture contest.

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