



September 2, 2014

Ms. Dorothy Lowman, Chair  
Pacific Fisheries Management Council  
1100 NE Ambassador Place, #101  
Portland, OR 97220

Mr. William Stelle, Regional Administrator  
NOAA Fisheries, West Coast Region  
7600 Sand Point Way NE  
Seattle, Washington 98115

Re: Anchovy Management, Future Council Meeting Agenda and Workload Planning, Item L.6

Dear Ms. Lowman, Mr. Stelle, and Council members:

We respectfully request that the Council include northern anchovy management on its November agenda for Coastal Pelagic Species (CPS). Northern anchovy is one of the most important forage species in the California Current ecosystem and fishing pressure is increasing, yet stock status is poorly known and more management safeguards for this species are needed in the CPS Fishery Management Plan (FMP) to ensure adequate forage for dependent predators. Agendizing this topic for November will allow the National Oceanic and Atmospheric Administration's Fisheries Service (NOAA Fisheries) to inform the Council and the public as to the status of the stock

assessment process as well as create an opportunity for public input and discussion. It may also provide the Council with the information needed to generate a motion identifying and prioritizing tasks to advance management of northern anchovy. This attention is critically needed in order to begin the process of putting in place an updated, scientifically sound and legally compliant management framework for this essential forage species.

In 2013, a federal court ordered NOAA Fisheries to establish a maximum sustainable yield (MSY) or MSY proxy for the northern subpopulation of northern anchovy. NOAA Fisheries recommended an MSY fishing mortality rate ( $F_{msy}$ ) of 0.3 for the northern subpopulation, resulting in an MSY of 26,000 mt. In developing its recommendation to the Council, NOAA Fisheries acknowledged that the information needed to develop an accurate MSY was incomplete and advised “as new information becomes available that this value be reevaluated.”<sup>1</sup> At its November 2013 meeting, the Council adopted the MSY as recommended by NOAA Fisheries. In the discussion preceding the motion, the Council acknowledged the near-complete lack of information on the status of either the northern or the central subpopulation and recommended NOAA Fisheries prioritize stock assessments for both the northern and central subpopulations in the next five years.

Additionally, during the public comment period for the November meeting, our organizations recommended the Council and NOAA Fisheries take steps to implement and update required management measures for both subpopulations.<sup>2,3</sup> First, we recommended that NOAA Fisheries conduct full stock assessments on both subpopulations, which would support an updated, scientifically sound and legally compliant management framework for northern anchovy. This framework would account for ecosystem needs and the social and economic factors consistent with achieving Optimum Yield (OY), including precautionary management measures such as Annual Catch Limits, Minimum Stock Size Thresholds and other status determination criteria.

Second, we noted that despite specifying ACLs for so-called “monitored” species in the CPS FMP in Amendment 13 adopted in 2010, NOAA Fisheries has yet to promulgate regulations to implement these legally required management measures to prevent overfishing. We reiterate our request for NOAA Fisheries to issue proposed and final regulations to implement ACLs for northern anchovy.

Third, we recommended the Council eliminate the distinction made in the CPS FMP between “Active” and “Monitored” categories for CPS, which is contrary to the requirements of the Magnuson-Stevens Fishery Conservation and Management Act, is antiquated, and has resulted in insufficient scientific and management attention paid to monitored stocks including northern anchovy.

We made these recommendations to address three primary scientific and management concerns: (1) the importance of anchovy to predators; (2) the lack of basic information on the status of northern anchovy stocks combined with declining trends in northern anchovy in recent surveys; and (3) increased fishing effort targeting northern anchovy. We provide detailed discussion of these concerns below.

**(1) Importance of anchovy to predators.** Anchovy are a vitally important prey species for a multitude of predators in the California Current System (CCS). The Council’s Fishery Ecosystem Plan notes:

*“The greatest proportion of energy flow in the CCS appears to be through krill, market squid, northern anchovy, Pacific sardine, and Pacific herring.”*

Anchovy are important to managed fish species in the salmon, groundfish, and highly migratory species Fishery Management Plans. For example, the seasonal diet of Chinook salmon in California can be over 90% anchovy.<sup>4</sup>

According to two separate and complementary new analyses, anchovy is the single most important prey species for California Current seabirds,<sup>5</sup> and the first or second most important for the broader suite of predators, such as humpback whales, Chinook salmon, dolphins, and pinnipeds.<sup>6</sup> Numerous seabirds including California Brown Pelican; Short-tailed, Sooty, Buller’s, Flesh-footed, Pink-footed, and Black-vented Shearwaters;<sup>7,8,9</sup> Common Murre; Rhinoceros Auklet; Craveri’s Murrelet; Scripps’s Murrelet; and California Least Tern rely on anchovy for one or more seasons of the year.<sup>10</sup> Newly published analyses of seabird and forage fish distribution and abundance in the CCS show that a substantial decline in seabird abundance in the northern portion of the southern CCS (from around Pt Conception, CA North) – a rate of decline of 2.2% per annum from 1987-2011— is attributable to declines in anchovy abundance and availability. The authors note:

*“We think anchovy decline probably accounts for much of the long term decline in the seabirds in the region.”<sup>11</sup>*

Pacific Brown Pelicans are heavily dependent on abundance and availability of anchovies in close proximity to colonies during the pre-breeding and breeding periods.<sup>12,13</sup> Anchovies comprised 33% -100% of the diets of breeding pelicans in six years of surveys that took place at the U.S. Channel Islands between 1991-2005, including two years where anchovies comprised 100% of the diet.<sup>14</sup> Since 2010, biologists have noted a general decline in Pacific Brown Pelican reproductive success, culminating in a near-total nesting failure in 2012 and 2013. In 2014, biologists reported the first-ever range-wide breeding failure of Pacific Brown Pelicans, from the Gulf of California through the U.S. Channel Islands.<sup>15</sup> At the Channel Islands, biologists analyzed a range of possible causes, including contaminants, disease, and disturbance effects, and concluded that local prey availability during the breeding season is most likely the primary cause of these reproductive failures.<sup>16</sup>

It is important to note that the CPS FMP, which was originally the Northern Anchovy FMP, used to include a broader set of management measures for northern anchovy, including a harvest control rule with a CUTOFF biomass of 300,000 mt (double the CUTOFF in the Pacific sardine Harvest Guideline) under which the catch level was capped at 7,000 mt. This harvest strategy was designed so that fishing only occurred at high levels of abundance, and included the explicit goal of ensuring a forage reserve for marine predators. At the time, NOAA Fisheries and the Council were required to pay special attention to the forage needs of Brown Pelicans in formulating and implementing management measures for northern anchovy.<sup>17</sup>

In fact, the U.S. Fish and Wildlife Service based its 2009 decision to remove Brown Pelicans from Endangered Species Act protection in part on the assumption that the CPS FMP would ensure sufficient food for breeding success of the west coast population of Brown Pelicans:

*The CPSMP will continue to ensure that adequate forage is available to pelicans if economic conditions change and northern anchovies become more intensively fished. The CPSFMP will also ensure that other forage fishes used by pelicans, such as Pacific sardines and Pacific mackerel, are also managed to preserve adequate forage reserves.*<sup>18</sup>

However, the entire management regime originally established by the Northern Anchovy FMP was eliminated in 1998 when the FMP became the CPS FMP in Amendment 8, and northern anchovy were relegated to “monitored” status. The fact that Brown Pelicans have experienced significant breeding failures for the past five years, and sea lions pups in southern California have experienced high mortality rates due to lack of prey in the past two years, indicate that the forage supply for some marine predators is inadequate. NOAA Fisheries and the Council should re-evaluate the existing fishery management measures for CPS in light of current science and the needs of these predators, and determine whether improvements can be made to ensure adequate forage.

**(2) Lack of stock information combined with declining survey trends.** The central subpopulation was last assessed in 1995 and the biomass assessment for the northern subpopulation is based on egg, larval and acoustic surveys from the 1970s. At the November 2013 Council meeting, NOAA Fisheries acknowledged that it had incomplete information for both subpopulations, and noted that full stock assessments are tentatively planned for 2015 and 2016 for the northern and central subpopulations, respectively.<sup>19</sup> The urgent need to conduct full stock assessments is underscored by the long-term declining trend in anchovy abundance in the CCS in survey cruises conducted by the NOAA Fisheries Southwest Fishery Science Center, in the range of the central subpopulation.<sup>20</sup> Observers have also noted an increasing shoreward contraction of anchovy in certain areas of the CCS.<sup>21</sup>

**(3) Existing and increasing landings.** As of August 14, 2014, anchovy landings in California are at the highest level since 2008, with 10,158 tons landed, amounting to ex-vessel revenue of \$1,514,340. There were no reported landings in Oregon in 2014.<sup>22</sup> Fisheries effort on anchovy may continue to increase in light of the collapse of the sardine stock, which has recently triggered Council action to reduce harvest quotas.<sup>23</sup>

Thank you for your time and consideration, and for your work in advancing ecosystem-based fishery management. For the reasons we’ve detailed above, there is a critical need to agendaize northern anchovy for the November Council meeting. We look forward to working with you on this important issue.

Sincerely,



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Andrea Treece  
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Karen Garrison  
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<sup>1</sup> NMFS. 2013. Potential alternatives for establishing an estimate of MSY for the northern subpopulation of northern anchovy. Agenda Item E.3.a. Supplemental Attachment 1, NMFS Report. November.

<sup>2</sup> Audubon, Earthjustice, Oceana, Pew Charitable Trusts. 2013. Comment letters and public comment submitted under Agenda Item E.3: Establish MSY Reference Point for Northern Anchovy. November meeting of the PFMC. Costa Mesa, CA.

<sup>3</sup> Agenda Item E.3.c, Supplemental Public Comment 3 (Oceana PowerPoint).

<sup>4</sup> Thayer, J, *et al.* 2013. Changes in California Chinook salmon diet over the past 50 years: Relevance to the recent population crash. *Mar Ecol Prog Ser.*

<sup>5</sup> Szoboszlai, A. *et al.* (In prep) Data synthesis for understanding predator forage needs: A case study from the California Current. *Ecological Archives.*

<sup>6</sup> Ainley, D., P. Adams, and J. Jahncke. 2014. Towards ecosystem based-fishery management in the California Current System – Predators and the preyscape: a workshop. Unpublished report to the National Fish and Wildlife Foundation. Point Blue Conservation Science, Petaluma, California. Point Blue contribution number 1979.

<sup>7</sup> Lyday, S. *et al.* 2013. Shearwaters as ecological indicators: towards predicting fish catch in the California Current. <https://app.box.com/s/o3cf5a2xssm3qvu19r9q/1/1161890651/10450888935/1>

<sup>8</sup> Szoboszlai *et al.* (i) *ibid.*

<sup>9</sup> Sydeman, W. *et al.* 2001. Climate change, reproductive performance and diet composition of marine birds in the southern California Current system, 1969–1997. *Progress in Oceanography* 49: 309–329

<sup>10</sup> Thayer, J. *et al.* 2008. Forage fish of the Pacific Rim as revealed by diet of a piscivorous seabird: synchrony and relationships with sea surface temperature *Can. J. Fish. Aquat. Sci.* 65: 1610–1622

<sup>11</sup> Sydeman, W. *et al.* 2014. Climate–ecosystem change off southern California: Time-dependent seabird predator–prey numerical responses. *Deep-Sea Research II* <http://dx.doi.org/10.1016/j.dsr2.2014.03.008i>

<sup>12</sup> Anderson, D. *et al.* 1980. Brown pelicans as anchovy stock indicators and their relationships to commercial fishing. *CalCOFI Rep.*, Vol. XXI, 1980.

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- <sup>13</sup> Anderson, D. et al. 1982. Brown pelicans: influence of food supply on reproduction. *OIKOS* 39: 23-31.
- <sup>14</sup> Harvey, L. 2013. California Institute of Environmental Studies. California Brown Pelican reproductive decline on the Channel Islands colonies. Unpublished data. March.
- <sup>15</sup> May 2014. Preliminary data presented by Dan Anderson (Mexico) and Laurie Harvey (Channel Islands) at phone meeting of the Pacific Brown Pelican Rangewide Technical Working Group. Convened by USFWS Region 8. Carlsbad, CA.
- <sup>16</sup> Harvey, L. 2013. *Ibid.*
- <sup>17</sup> U.S. Fish and Wildlife Service. 1983. California Brown Pelican Recovery Plan. Portland, OR.  
<http://www.fws.gov/arcata/es/birds/brnpelican/documents/1986%20Recovery%20Plan%20for%20the%20Brown%20Pelican.pdf>
- <sup>18</sup> Federal Register / Vol. 74, No. 220 / Tuesday, November 17, 2009 / Rules and Regulations. 50 CFR 17 Endangered and Threatened Wildlife and Plants; Removal of the Brown Pelican (*Pelecanus occidentalis*) From the Federal List of Endangered and Threatened Wildlife; Final Rule.
- <sup>19</sup> NMFS. 2013. Agenda Item E.1.c . Supplemental FSC PowerPoint (Werner). November.
- <sup>20</sup> NMFS. 2014. Annual State of the California Current Ecosystem Report. A Report of the NMFS Northwest and Southwest Fisheries Science Research Centers.
- <sup>21</sup> Hsieh, C.H., et al. (2005) A comparison of long term trends and variability in populations of larvae of exploited and unexploited fishes in the Southern California region: a community approach. *Prog Ocean* 67:160–185.
- <sup>22</sup> Pacific States Marine Fisheries Commission (PacFin). August 14, 2014.  
[http://pacfin.psmfc.org/pacfin\\_pub/all\\_species\\_pub/woc\\_r308.php](http://pacfin.psmfc.org/pacfin_pub/all_species_pub/woc_r308.php)
- <sup>23</sup> NMFS. 2014. *Ibid.*