

DOCKETED

Docket Number:	13-AFC-01
Project Title:	Alamitos Energy Center
TN #:	202589
Document Title:	Record of Conversation between CEC and Dan Lawson, Fisheries Biologist, NOAA re Green Sea Turtles in San Gabriel River
Description:	Conversation Date: 6-17-14
Filer:	Cenne Jackson
Organization:	CEC/Anwar Ali
Submitter Role:	Energy Commission
Submission Date:	6/25/2014 9:57:26 AM
Docketed Date:	6/25/2014

CALIFORNIA ENERGY COMMISSION



**Siting, Transmission
and Environmental
Protection Division**

FILE: 13-AFC-01

PROJECT TITLE: Alamitos Energy Center

Docket:

TECHNICAL AREA(S): Biological Resources

Telephone Meeting Location:

NAME: Jennifer Lancaster, Scott White, Anwar Ali **DATE:** 6/17/14 **TIME:** 2:00 p.m.

WITH: Dan Lawson, Fisheries Biologist, NOAA

SUBJECT: Green Sea Turtles in San Gabriel River

COMMENTS:

Staff spoke with Mr. Lawson regarding the population of Pacific green sea turtles that inhabit the San Gabriel River and vicinity, and associate with the warm water outfall of the Alamitos Generating Station.

- Very early in the study of this population; green sea turtles have only been documented by NMFS to inhabit the area year-round for 6 years. They have been recorded around the outfalls of the power plants, as well as upstream in the San Gabriel River, in the Alamitos Bay, and nearby areas.
- Two study sites for this population: San Gabriel River and Seal Beach National Wildlife Refuge
- Current research: tag-recapture program (began 2010), acoustic tracking (began 2012), temperature and movement associations, diet, genetics, contaminants, citizen science project to monitor turtles within Los Cerritos Wetlands, including the area near power plant outfalls
 - Turtle distribution and movements in the area, and the influence of temperature changes in River is the focus of a graduate thesis; should be published in about a year. In general, the power plant outfall area is the warmest spot in winter, but upstream is warmer in summer.
 - No publications as of yet; research is ongoing
- Current knowledge of local population:
 - Turtles present year-round, individuals appear to have sustained presence (likely for multiple years)
 - Preliminary unpublished data from tag-recapture program suggest population is larger than initially thought (~30 individuals captured but only a few were recaptures); genetic data suggest individuals are from a breeding population in Mexico but may be from unknown or unmonitored nesting beaches (genetics differ slightly from San Diego Bay population)
 - Turtles congregate in San Gabriel River year-round (associate more with power plant outfalls in winter, go upstream in summer). Turtles use broader area in spring-summer-fall, including Seal Beach NWR, Alamitos Bay, and other surrounding areas.
 - Majority of population are juveniles/subadults, but several large adults have been captured and/or observed as well – wide range of sizes



- This is the northernmost year-round foraging congregation of eastern Pacific green sea turtles (only occasional sightings/strandings north of here but no known colonies)
- General ecology of eastern Pacific green sea turtles:
 - Diet differs from green sea turtles in other regions – fairly omnivorous especially as juveniles. In San Diego Bay, diet consists of ~1/3 eelgrass, ~1/3 snail that lives in eelgrass, and ~1/3 algae, invertebrates, and other items. Diet of San Gabriel population of interest because there is no eelgrass at the River (although Seal Beach NWR has an abundance). Maybe eating a lot of invertebrates. San Gabriel turtles spend much time upstream in summer, which may also be related to seasonal presence of other types of macro algae or other prey.
 - Turtles hatch on beaches, enter ocean, and live in open ocean for perhaps 5 years (this life stage is not well understood by researchers). After several years at sea, turtles recruit to nearshore environment. There is a transition time when they move between nearshore and offshore environments, then they settle in to the nearshore (typically coastal estuaries), where they forage and spend the next several years. Once turtles mature in the nearshore area, they return to breeding beaches. It is thought that they return to familiar coastal estuaries after breeding, and may continue this process through adulthood. This information is from San Diego Bay and Baja California colonies; the San Gabriel River population may differ somewhat. Ongoing research is not yet conclusive.
- Potential effects of eliminating warm water outfall from Alamitos Generating Station
 - Data on San Diego Bay population: that power plant has been decommissioned for a few years and that population has been intensively studied for decades. Turtles did not leave when warm outfall was eliminated, but they dispersed more and are no longer congregating in a small area near the outfalls. Their activity period is now mostly during the summer months, presumably less active in winter without the outfall.
 - Big difference between San Gabriel River and San Diego Bay – in San Diego, the power plant was an attractant, but the area was otherwise in a much more natural state. San Gabriel system is much more confined, and unnatural setting due to development. Plans for restoration of the Los Cerritos Wetlands, including the lower reaches of the San Gabriel River are being developed right now, however.
 - We do not know the future temperature regime within the San Gabriel River mouth, during and following replacement of the Alamitos and LADWP Haynes power plants; this is likely to be challenging to predict.
 - The slow transition period for reducing the warm water outfall at Alamitos may give the turtles time to adapt. Food sources must be able to adapt too, but little is known about diet composition and the effects of future restoration of the wetlands to supplement current diet. Also, there are likely more inputs discharging to the River that contribute to warm temperatures.
 - This is a habitable area of green sea turtles' range even without the power plants.
 - Cannot predict response of local turtle population to loss of outfall with little information available on how habitat is likely to change in response; however, monitoring of the behavioral responses

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may be important for scientific purposes and conservation management.

- Mr. Lawson will provide staff with citizen science data, poster presentation, and any unpublished data he can get from ongoing research studies.

cc:	Signed:
	Name: Jennifer Lancaster