

Plum Creek Watershed Partnership Steering Committee Meeting

December 14, 2006
Lockhart, TX



Meeting Overview

Mark McFarland
Texas Cooperative Extension



Review and Discussion of Plum Creek Load Duration Curves



Review and Discussion of Potential Pollution Source Assessment

Aarin Teague
Certified Engineer in Training
TAMU Biological & Agricultural
Engineering



Progress on the Watershed Protection Plan Development

Matt Berg
Texas Cooperative Extension



Next Steps

Nikki Dictson

Texas Cooperative Extension



Role of Work Groups

- Work groups are an extension of the steering committee that discuss and work on specific topical areas.
- Make recommendations and develop components of the WPP for their topic.
- Provide leadership in implementation of practices.



Work Group Tasks

- Identify pollutant sources.
- Gather data and information and identify gaps.
- Estimate pollutant loads
- Set Goals and Objectives
- Identify BMPs that could be implemented to reduce pollution.
- Identify Outreach and Education that is needed
- Develop an Implementation Schedule.



Work Groups

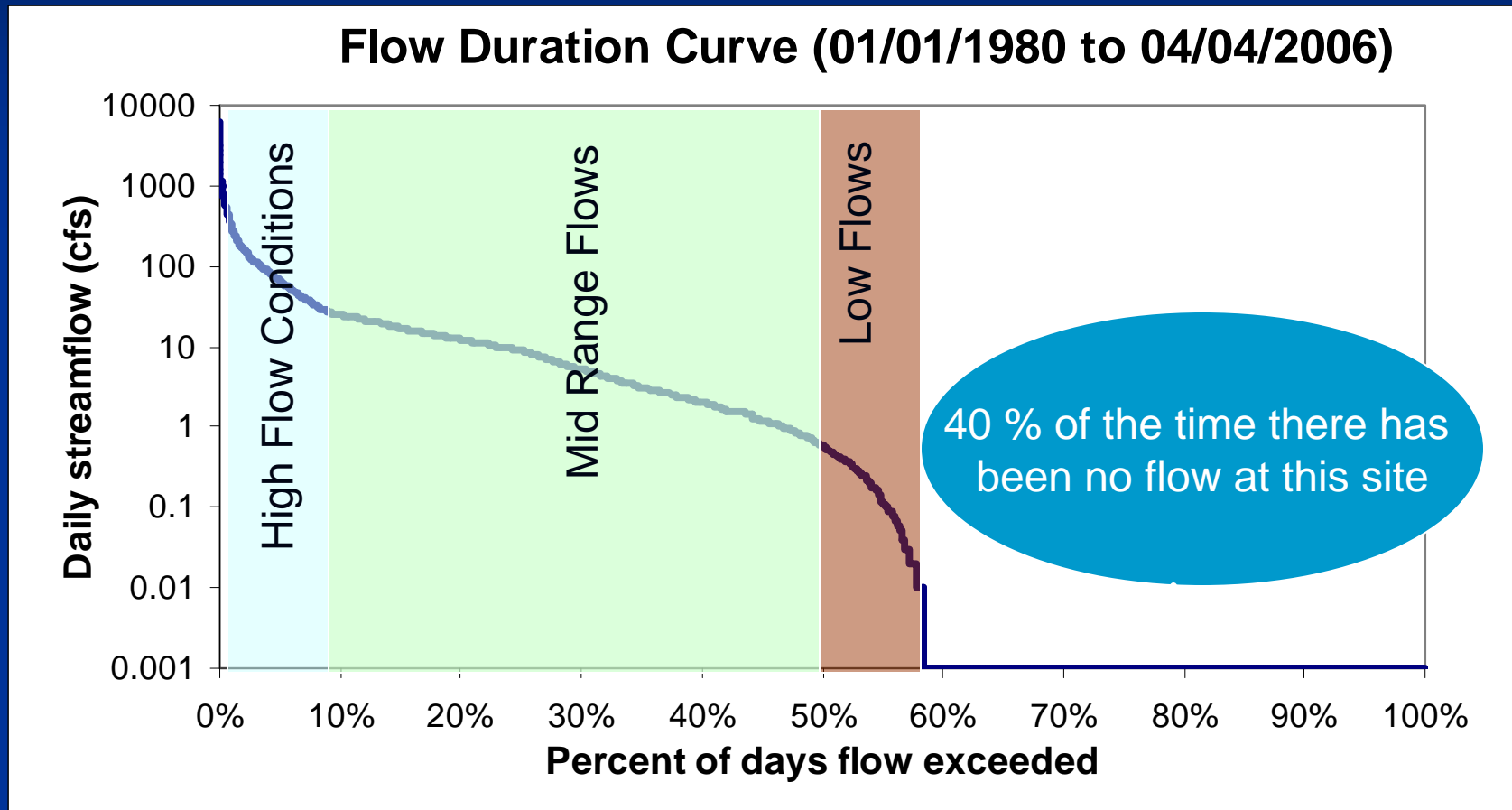
1. Outreach and Education
2. Urban Stormwater and NPS
3. Agriculture NPS
4. Wastewater Infrastructure/Industry
5. Water Quality and Habitat



Load Duration Curves (LDC)

Used for analyzing trends and
sources of contaminants

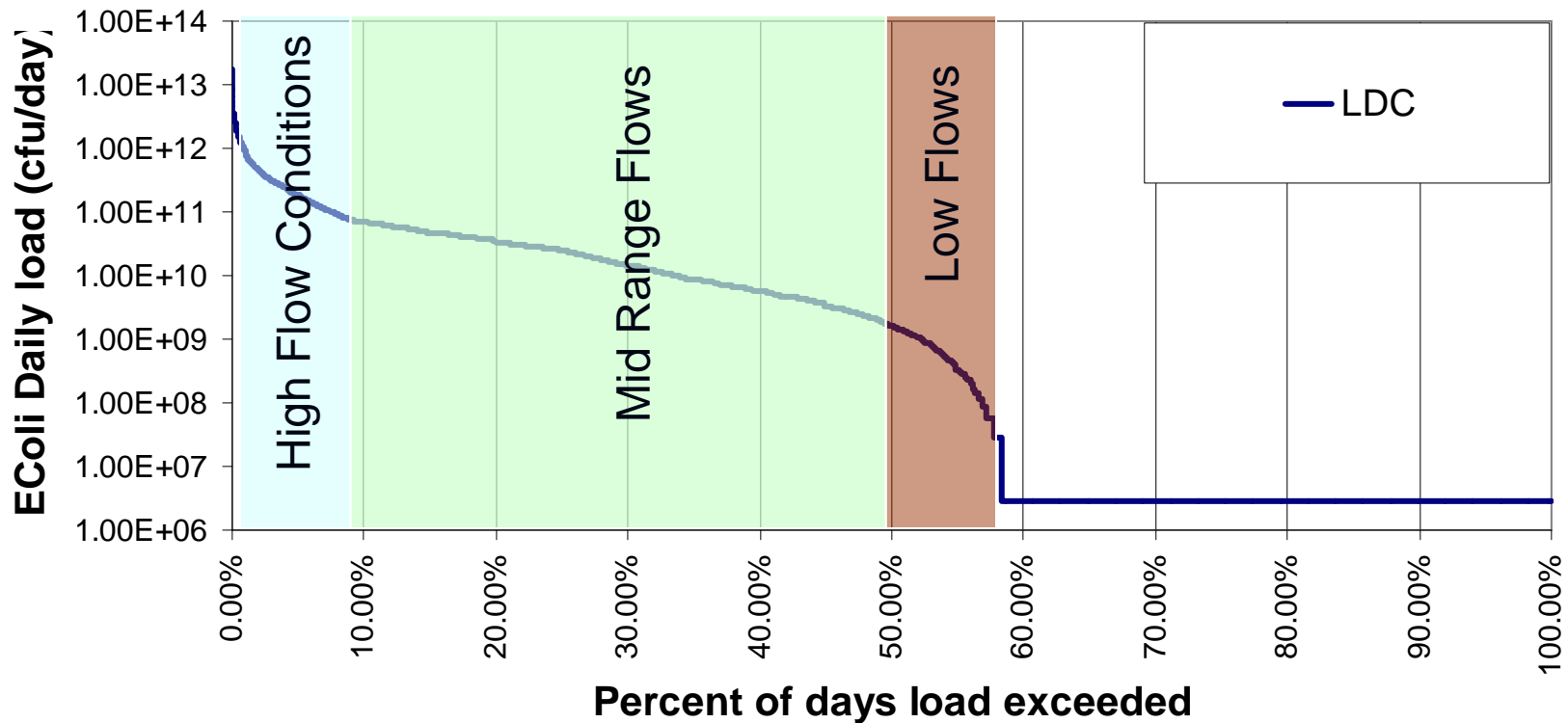
GBRA monitoring site 17406 (near Uhland)



- Stream flow rates (Y axis) vs. percent of days the stream flow exceeded a value on the Y axis (X axis)
- Stream flow data was based on adjusted USGS 8172400 flow data

GBRA monitoring site 17406 (near Umland)

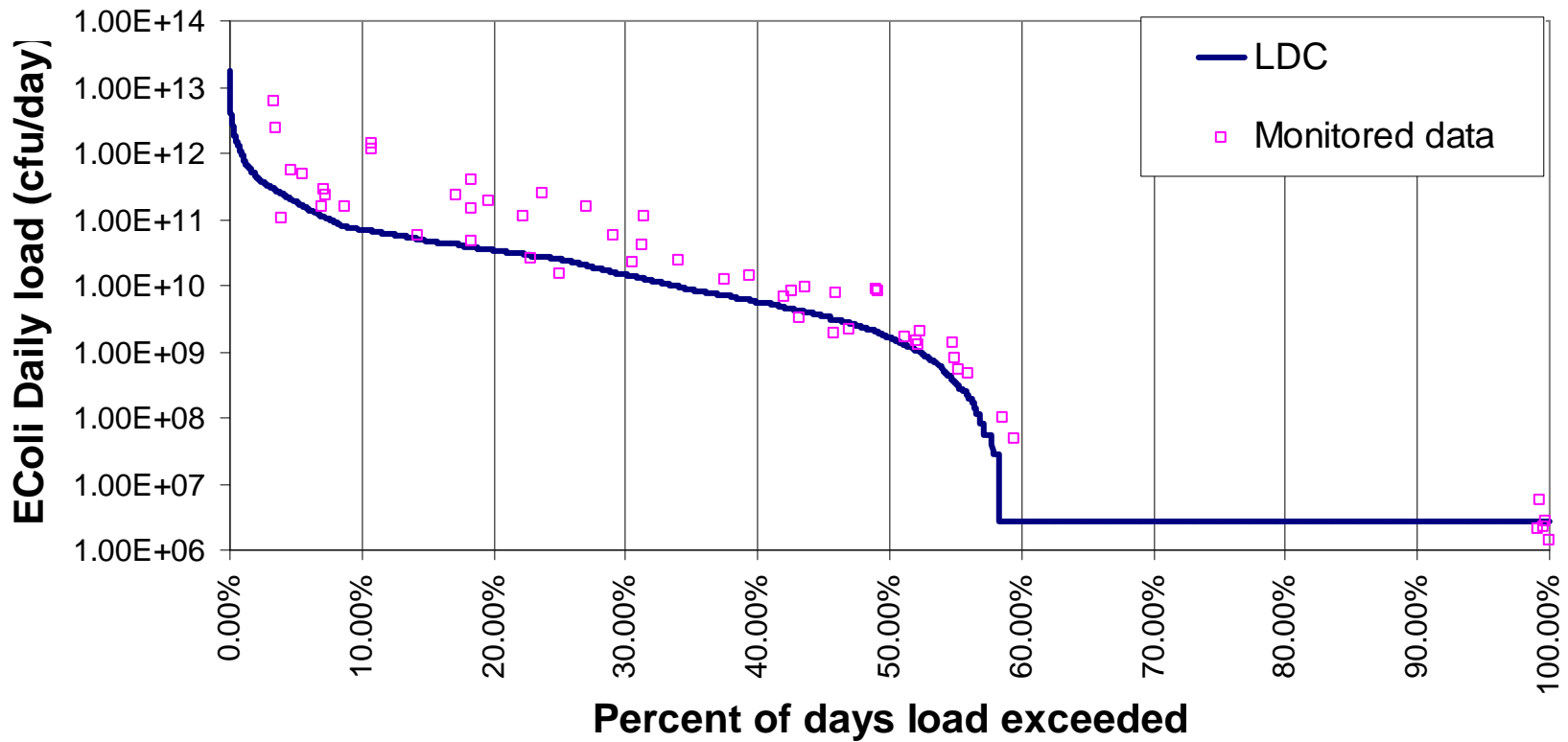
Load Duration Curve (1/1/1980-4/4/2006)



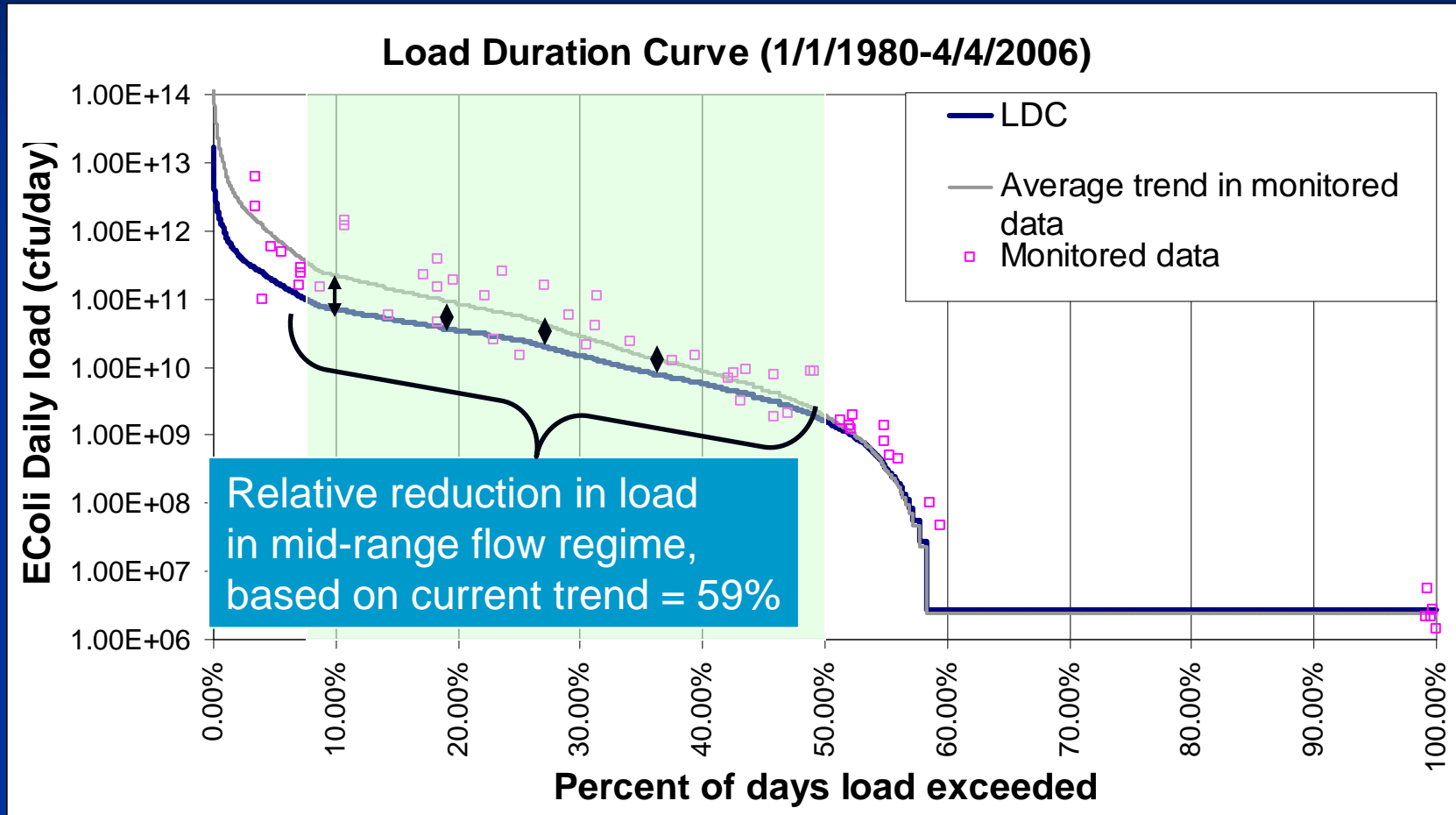
- LDC gives the target loads during different flow conditions (high, mid range, and low flow conditions)

GBRA monitoring site 17406 (near Umland)

Load Duration Curve (1/1/1980-4/4/2006)



GBRA monitoring site 17406 (near Umland)

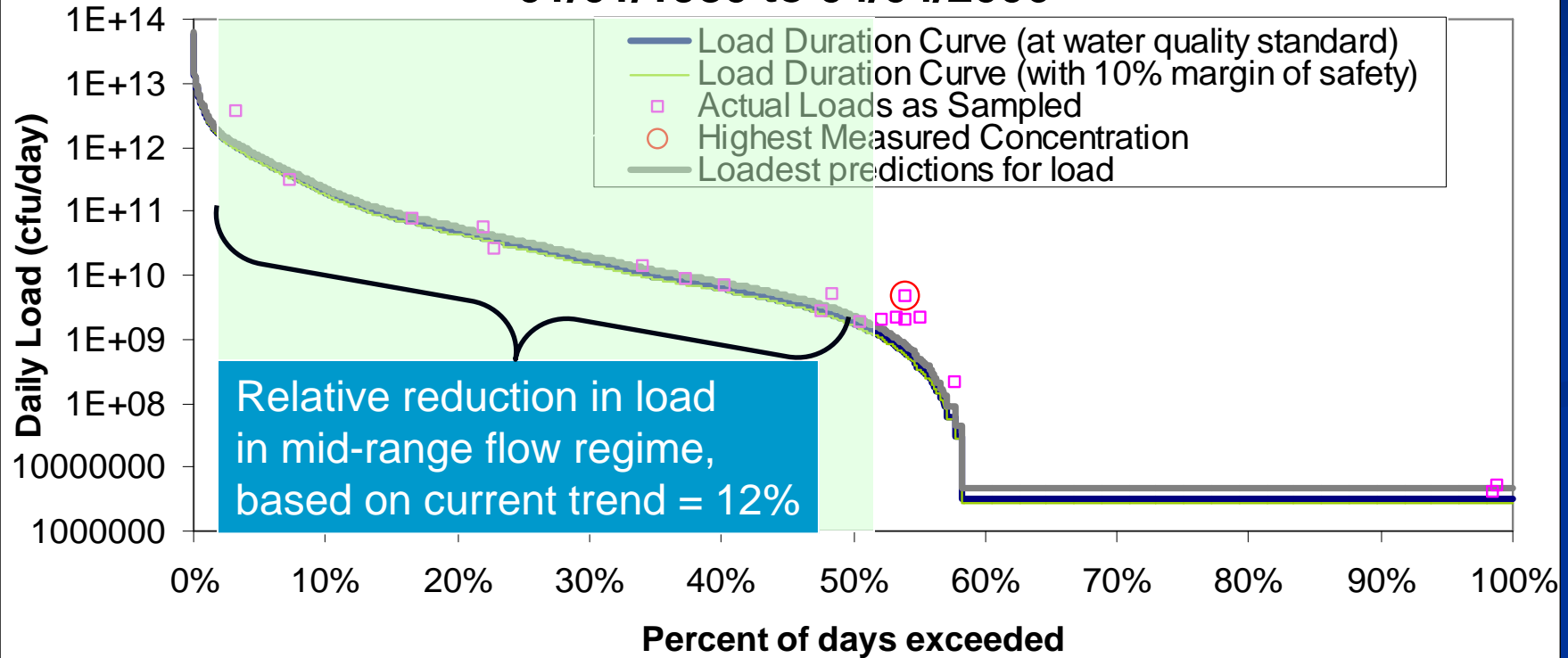


- A model of monitored data can be created to obtain the average trend in loads
- Restoration plans can use this model to estimate the average decrease needed in loads during different flow conditions

**LDC analysis for
TCEQ site 12647 near
Lockhart**

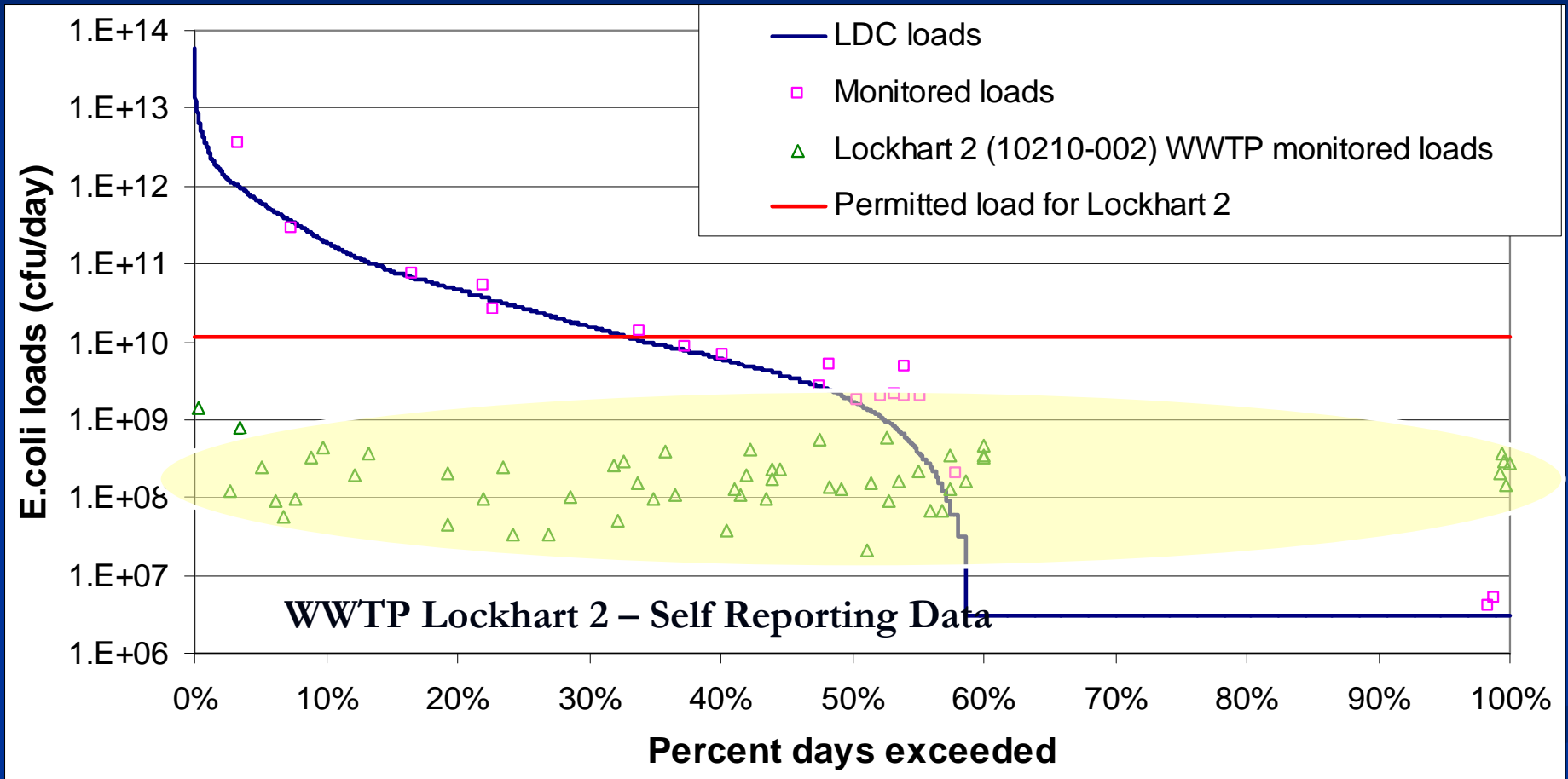
E. Coli Load Duration Curve (LDC) Lockhart

**TCEQ SITE 12647 (near Lockhart) Load Duration Curve:
01/01/1980 to 04/04/2006**



- Monitored loads for 12647 fall close to the target loads (given by LDC) for varying range of flows
- Stream flow data obtained from USGS 8172400, since very good compliance between USGS flow data and 12647 flow data for the same monitoring dates

E. Coli LDC with WWTP data

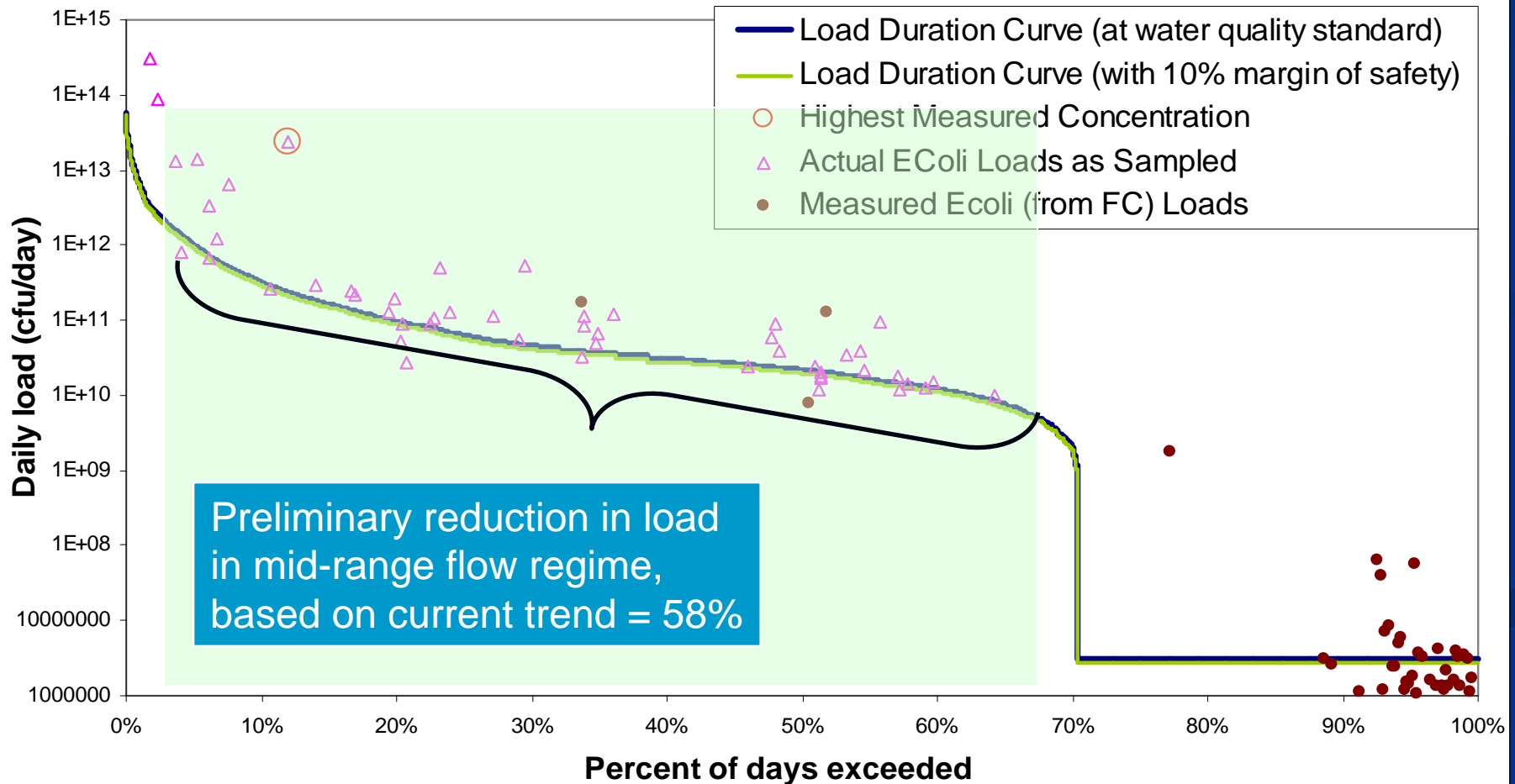


Waste water treatment plant Lockhart 2 is always below its permitted load limit. However, permitted load is indifferent to lower stream load limits during low flow and no-flow conditions

**LDC analysis for
GBRA site 12640 near
Luling**

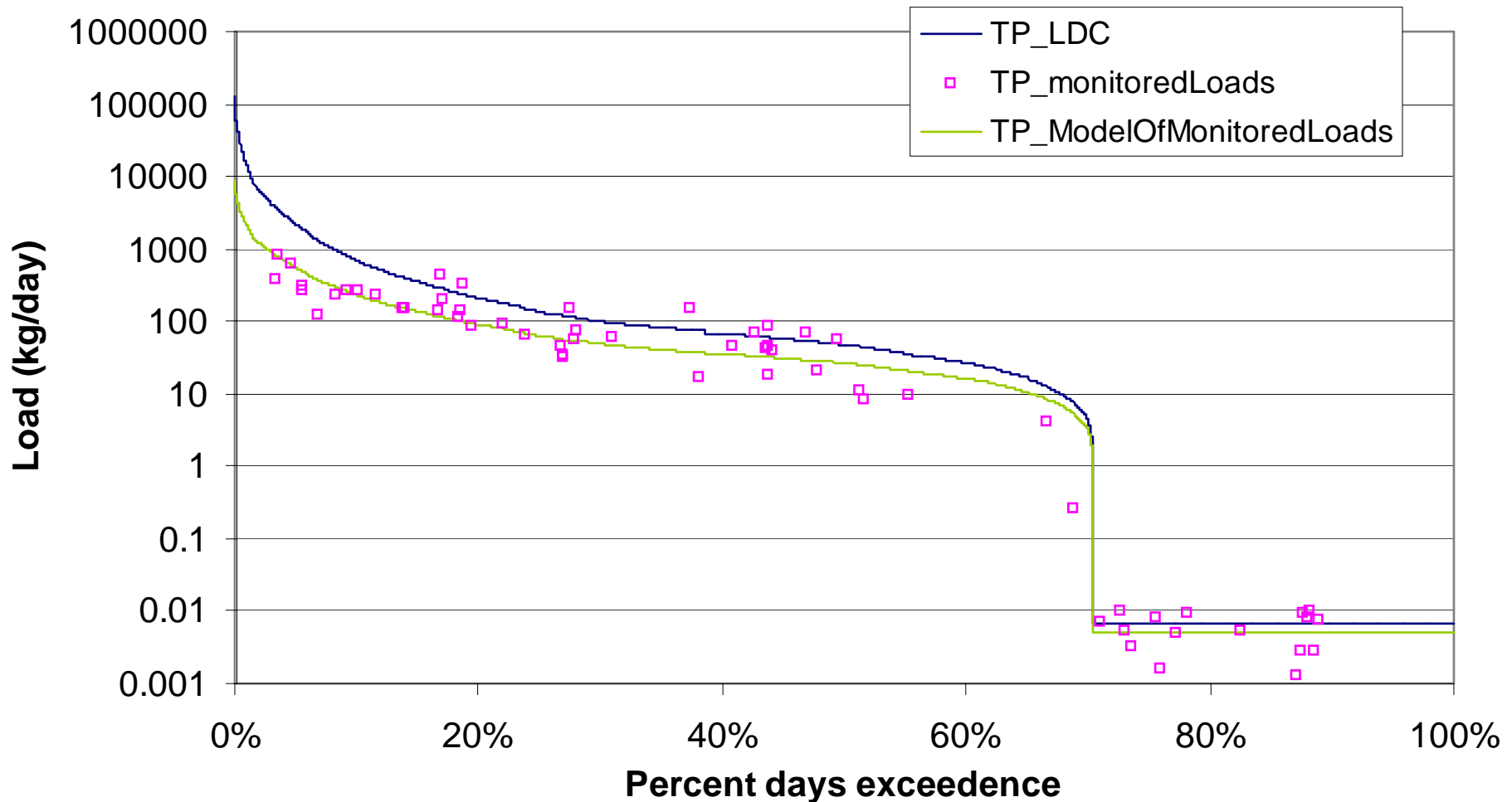
E. Coli LDC - Luling

GBRA Site 12640 (near Luling) Load Duration Curve (monitoring data 1996 to 2006)



Total Nitrate+ Nitrite LDC, Luling

Load Duration Curve for Total NO₃-N+NO₂-N (standard = 2.76 mg/l)
Flow Period : 1/1/1980 to 4/4/2006



Total Phosphorus LDC, Luling

Load Duration Curve for Total Phosphorus (standard = 0.8mg/l)
Flow Period : 1/1/1980 to 4/4/2006

