

Citizen Science/ Proyecto Z-268

Paloma Rodríguez¹, Cristina López¹ y Armando Román¹

D. Sotomayor-Ramírez¹, G. Martínez¹, L. Pérez-Alegría¹, D.
Bachoon²

¹ College of Agricultural Sciences. University of Puerto Rico,
Mayagüez Campus

² Georgia College and State University, Milledgeville, GA

Citizen Monitoring of Water Sanitation in a Rural Puerto Rico Watershed

- Financiado por la Agencia de Protección Ambiental Federal (USEPA)
- Citizen Science
- Investigador principal Dr. David Sotomayor-Ramírez
- Comenzó en enero 2014 y termina diciembre 2015
- Ubicado en el Valle de Lajas

Los objetivos del Citizen Monitoring/Z-268

- Conocer recursos de agua
- Identificar y restaurar lugares contaminados
- Ser portavoces de la comunidad
- Crear conciencia sobre la calidad de agua y su relación con los usos de terreno
- Proveer posibles soluciones a problemas ambientales y de salud pública

Zona de estudio



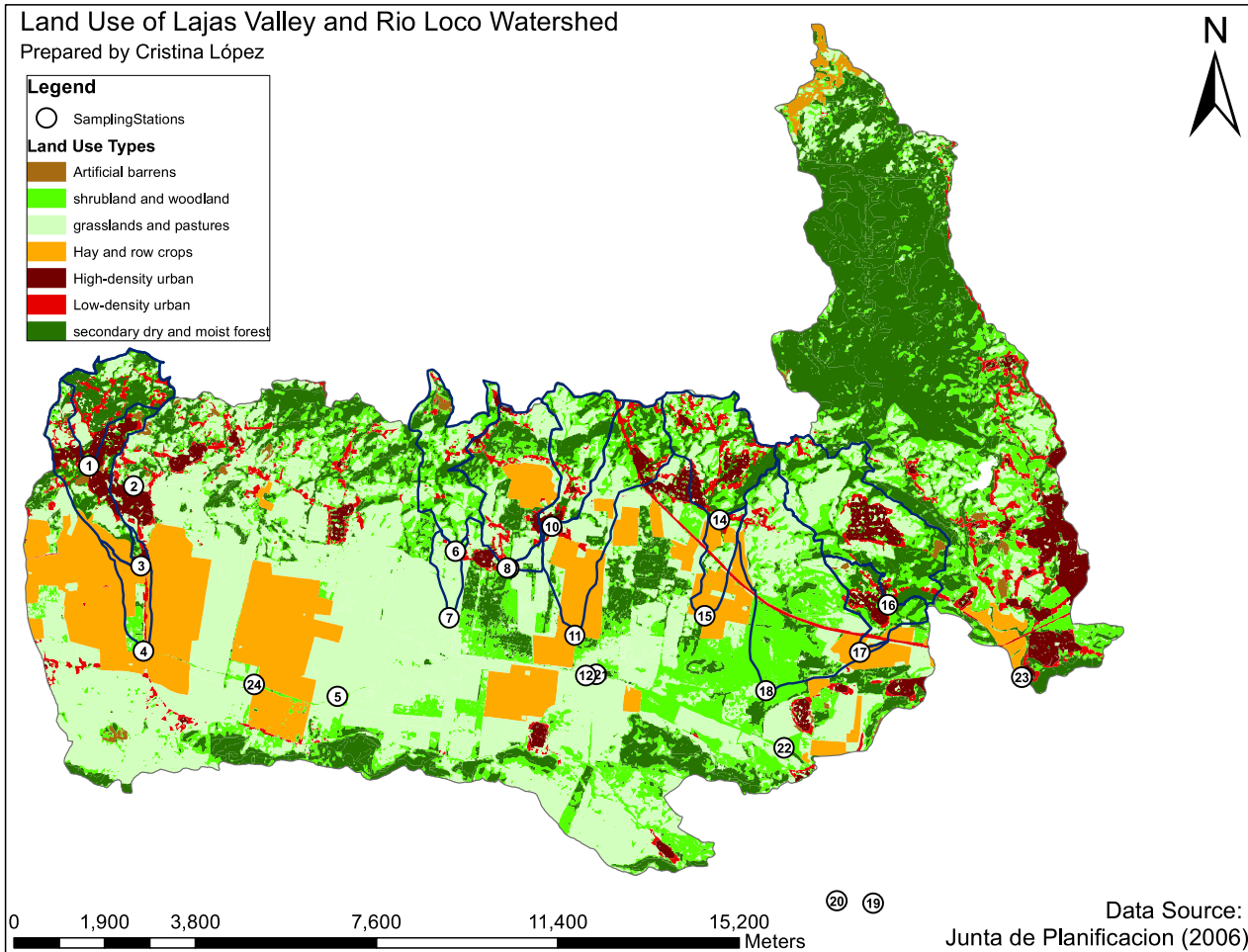
Uso de terrenos

Landuse	Area	Sources	
		Human	Animal
Urban and suburban	Sewage	WWTP, sewage transfer and pumping stations, WW sewage delivery infrastructure to WWTP, upstream from WWTP discharge points, downstream from WWTP discharge points	Urban animals (poultry, wildlife, dogs, cats) Suburban animals (poultry, wildlife, dogs, cats), small animal (hog, goat, and poultry) production facilities
Suburban and rural	Non-sewage	Homes/buildings with septic tanks, illegal direct discharges to <u>drainageways</u> , sewage delivery infrastructure to WWTP	Rural animals (poultry, wildlife, dogs, cats), dairy production facilities, small animal (hog, goat, and poultry) production facilities, large animal (horse) production facilities

Land use (Gould et al. 2012)

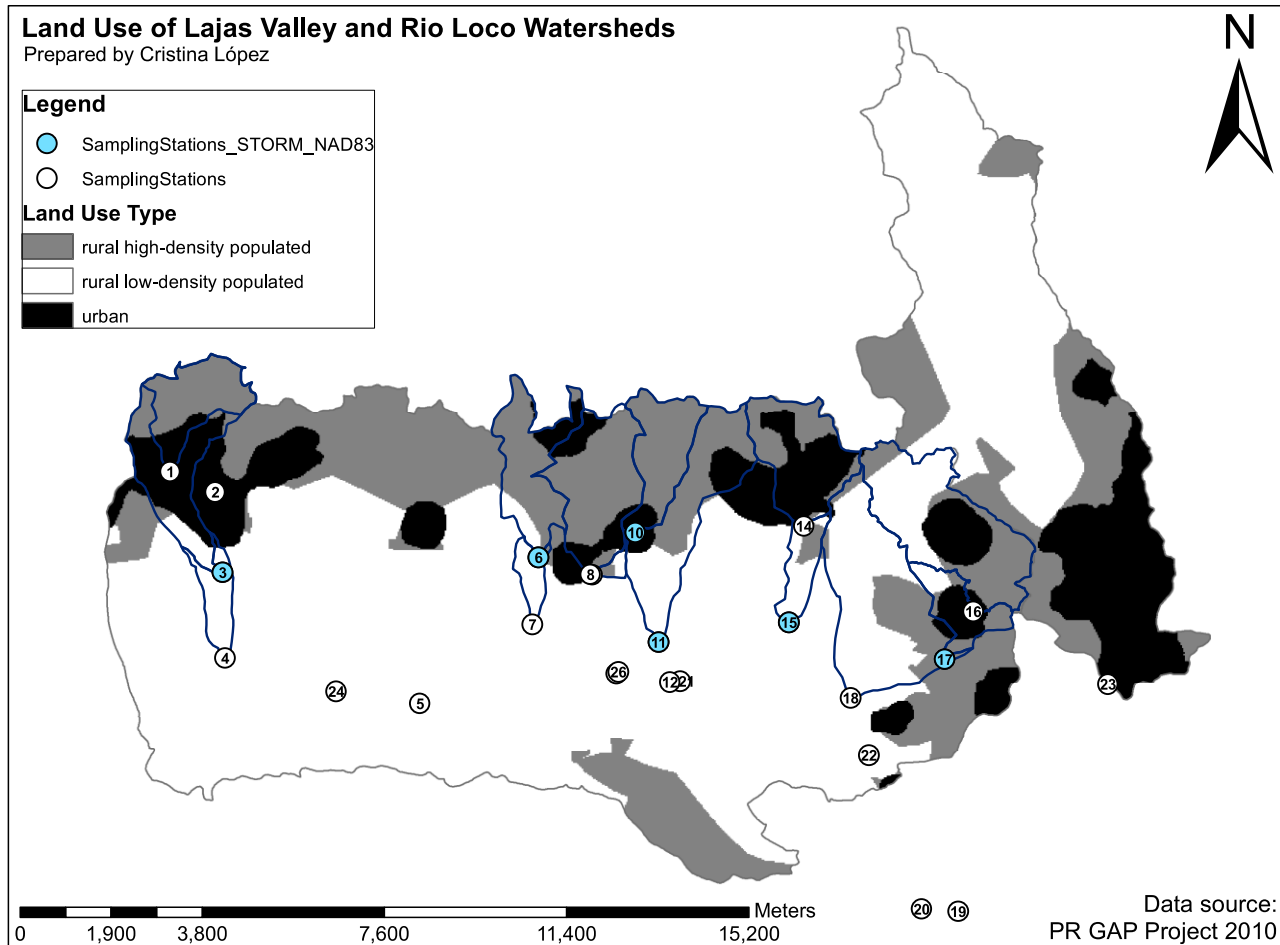
- Urban - Area is not developed by at least 20% (< 80% in vegetative land-cover) or > 500 persons/km²
- Sub-urban - Area has more than 80% of vegetative land-cover with > 500 persons/km²
- Rural - Area has more than 80% of vegetative land-cover with < 500 persons/km²

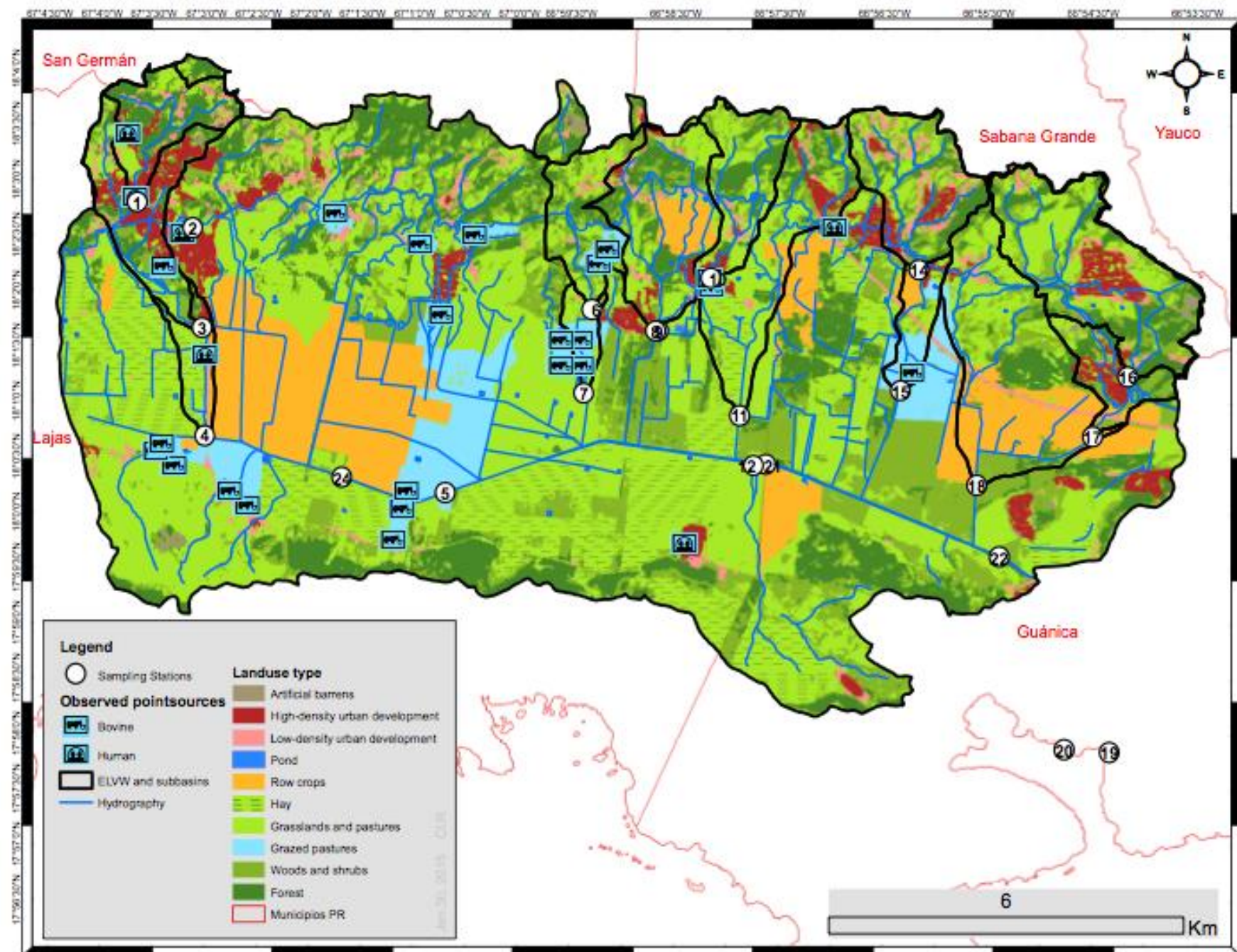
Uso de terrenos Junta de Planificación (2006)



Uso de terrenos

Gould et al. (2010)



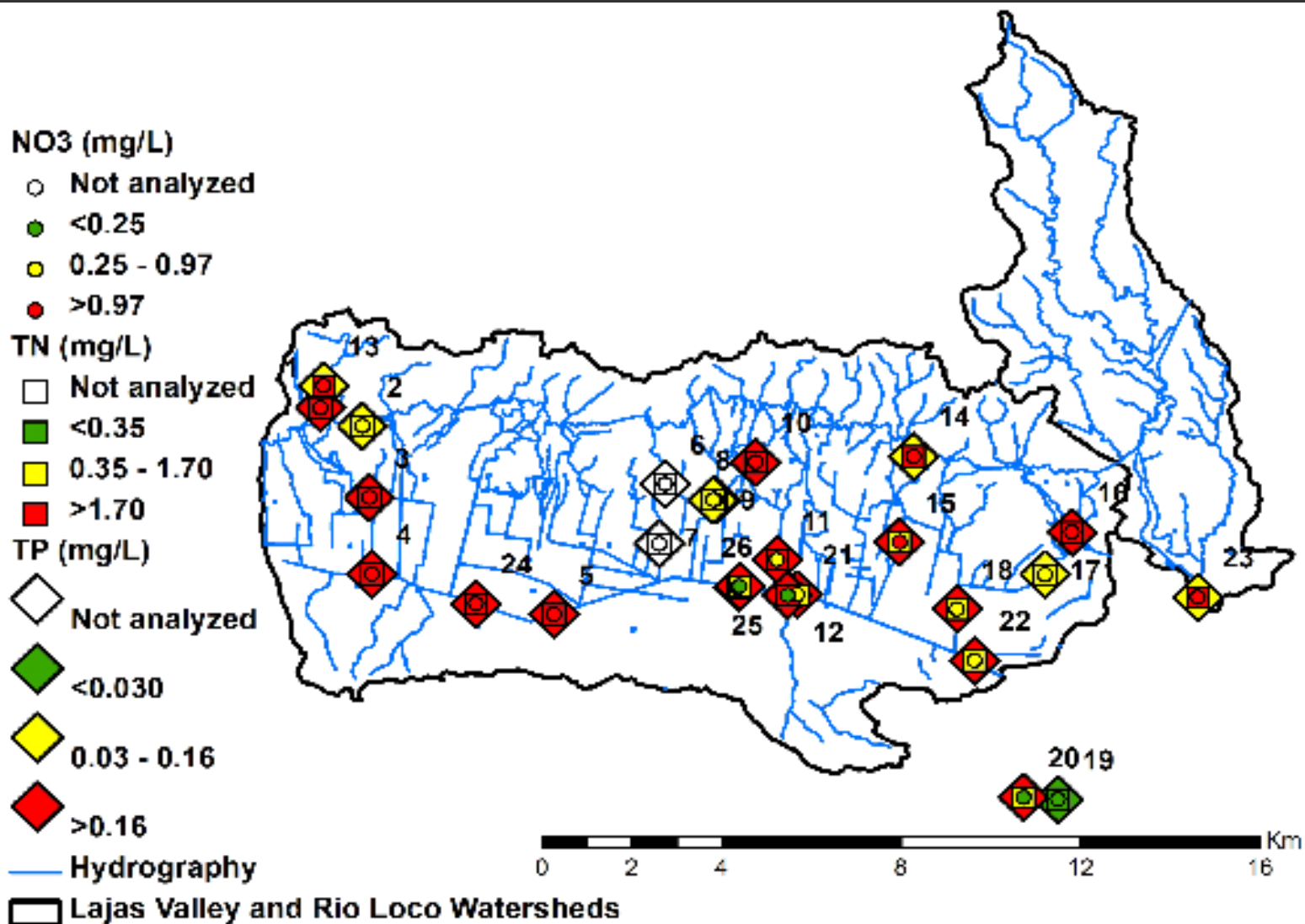


Criterios numéricos para nutrientes

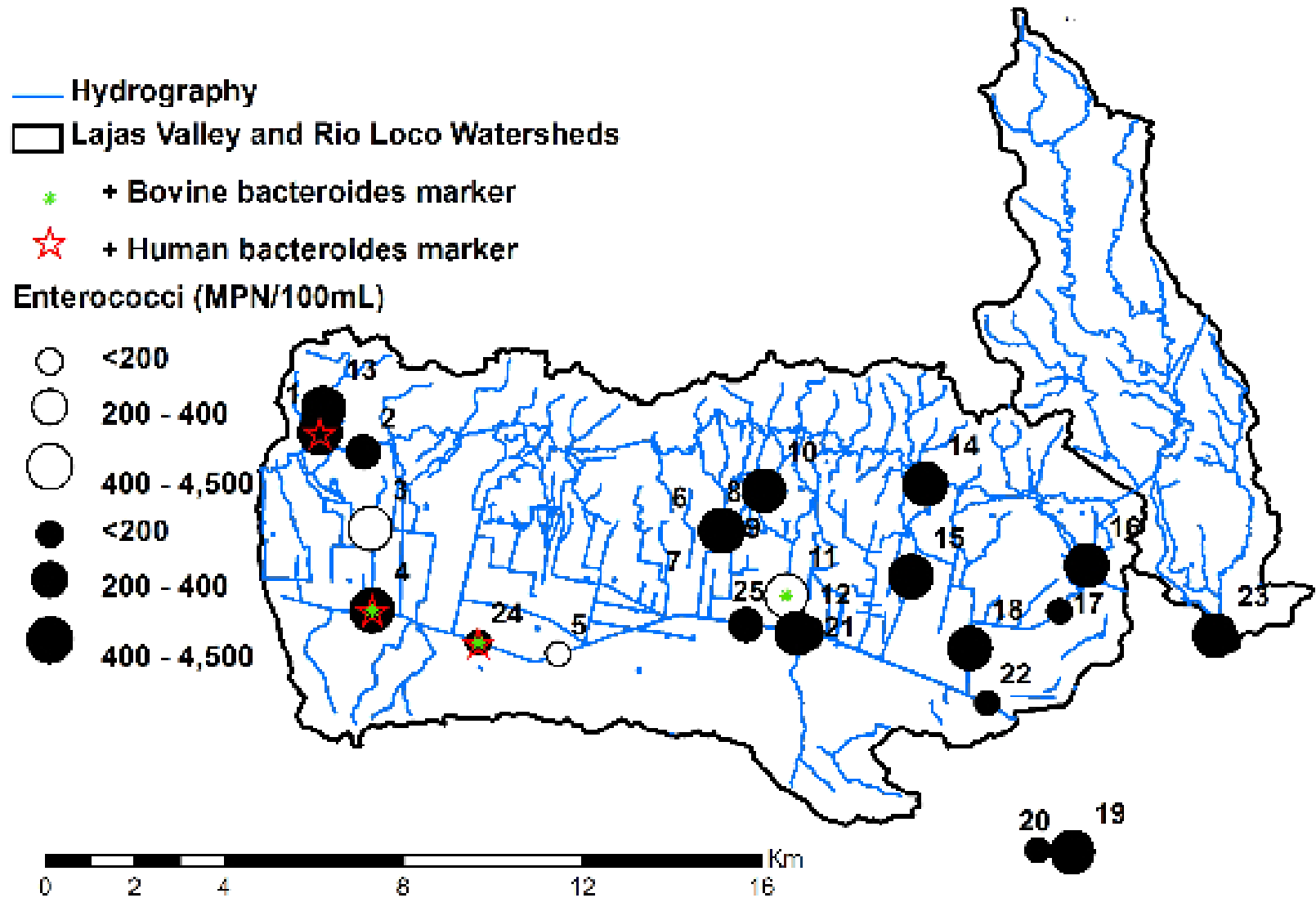
Nutrient concentrations are being interpreted in the context of suggested numeric nutrient criteria in rivers of Puerto Rico (Sotomayor-Ramírez & Martínez, 2014)

Threshold	Total N	NO ₃ -N	Total P
-----mg/L-----			
Non-enriched	<0.35	<0.25	<0.030
Enriched	>0.35-1.70	>0.25-0.97	>0.030-0.160
Impaired	>1.70	>0.97	>0.160

Nutrientes en el Valle



Bacteria, OBs, marcadores



Página web



<http://uprm.edu/p/waterquality/inicio>

Página de Twitter



The image shows a screenshot of the Twitter profile page for 'Water Quality PR' (@waterqualitypr). The header features a large landscape photo of a lake and a smaller inset photo of a person in a blue glove holding a water sample. The profile name is 'Water Quality PR' with the handle '@waterqualitypr'. The bio states 'Water quality monitoring in southwestern Puerto Rico #waterqualitypr' and the location is 'UPR - Mayagüez'. The statistics show 29 tweets, 45 following, 32 followers, and 17 favorites. The 'Following' button is highlighted. The 'Tweets' tab is selected, showing a tweet from 'WaterNetwork' (@WaterNetwork1) retweeted by 'Water Quality PR'. The tweet text is 'Researchers at @UCLA recommend that #California start requiring #water agencies to monitor leaks & measure #waterloss bit.ly/1Lj7NzS'. The 'Who to follow' section on the right lists 'Common White Girl @girlp...' and 'M.Rosario @multiversario'.

Water Quality PR
@waterqualitypr

Water quality monitoring in southwestern Puerto Rico #waterqualitypr

📍 UPR - Mayagüez

TWEETS 29 FOLLOWING 45 FOLLOWERS 32 FAVORITES 17

Following

Tweets Tweets & replies Photos & videos

Water Quality PR retweeted

WaterNetwork @WaterNetwork1 · 7h
Researchers at @UCLA recommend that #California start requiring #water agencies to monitor leaks & measure #waterloss bit.ly/1Lj7NzS

Who to follow · Refresh · View all

Common White Girl @girlp...
Follow

M.Rosario @multiversario
Follow

@waterqualitypr

Próximo...

- Entrenamiento
- Grupos de trabajo
 - Muestreo de quebradas en flujo base
 - Muestreo en eventos de tormenta
 - Uso de Enterolert para cuantificar *Enterococos*
 - Metabolismo de corrientes
 - Comunicaciones/publicidad del proyecto

Contactos

David.sotomayor@upr.edu

Paloma.rodriguez1@upr.edu

Cristina.lopez5@upr.edu

Armando.roman3@upr.edu