ENVIRONMENTAL FLOWS: WATER FOR THE SABINE, THE NECHES, AND SABINE LAKE

Myron Hess
National Wildlife Federation

Photo courtesy Texas Parks & Wildlife © 2004 Earl Nottingham

ROLE OF INSTREAM FLOWS

Water Quality
Fish and wildlife
Livestock
River recreation
Bottomland forests
Tourism

ROLE OF FRESHWATER INFLOWS

- Supply nutrients
- Supply sediments
- Maintain salinity balance

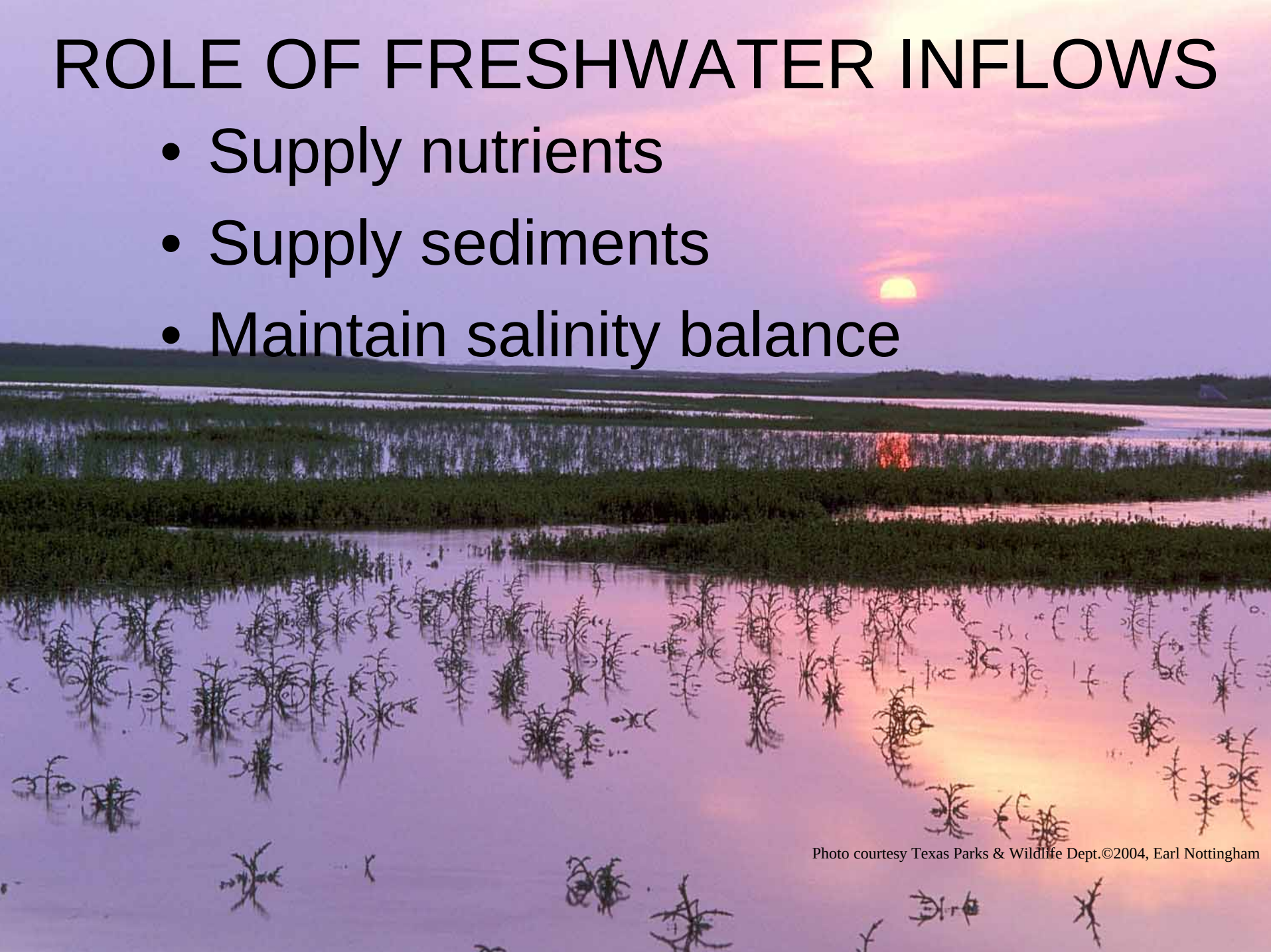
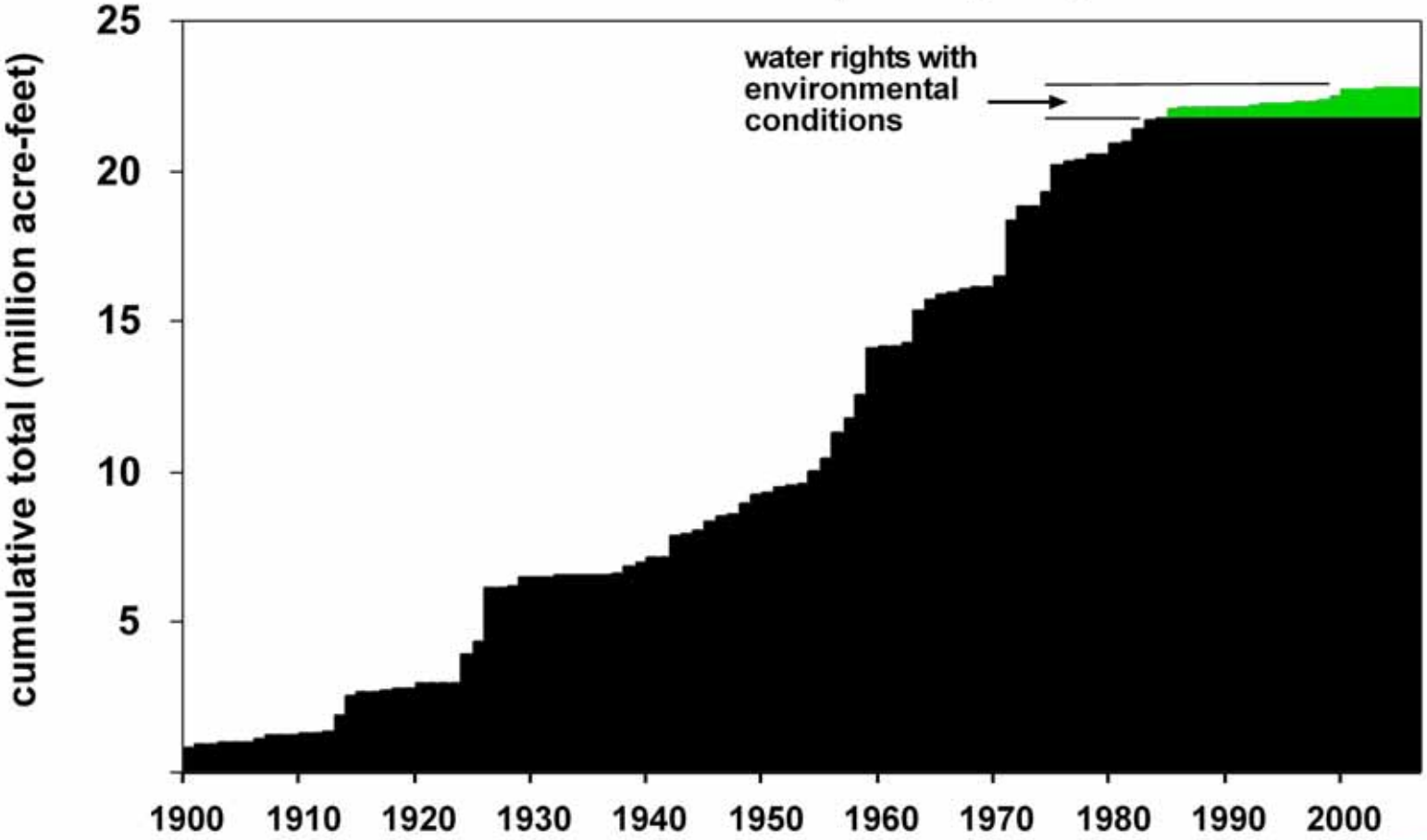


Photo courtesy Texas Parks & Wildlife Dept.©2004, Earl Nottingham

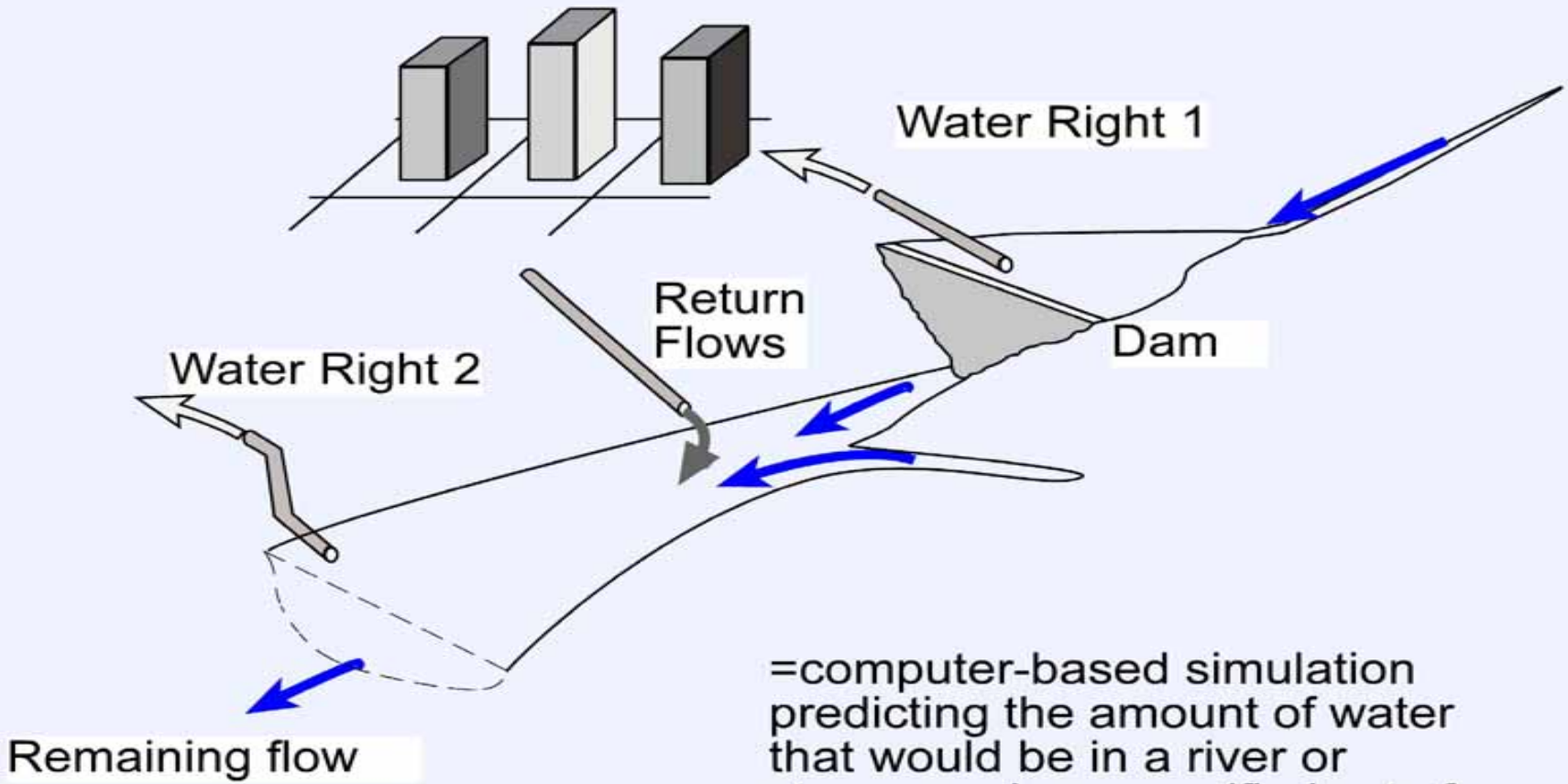
Texas Water Rights -
Timeline of all consumptive rights granted



Source: data from Texas Commission on Environmental Quality.

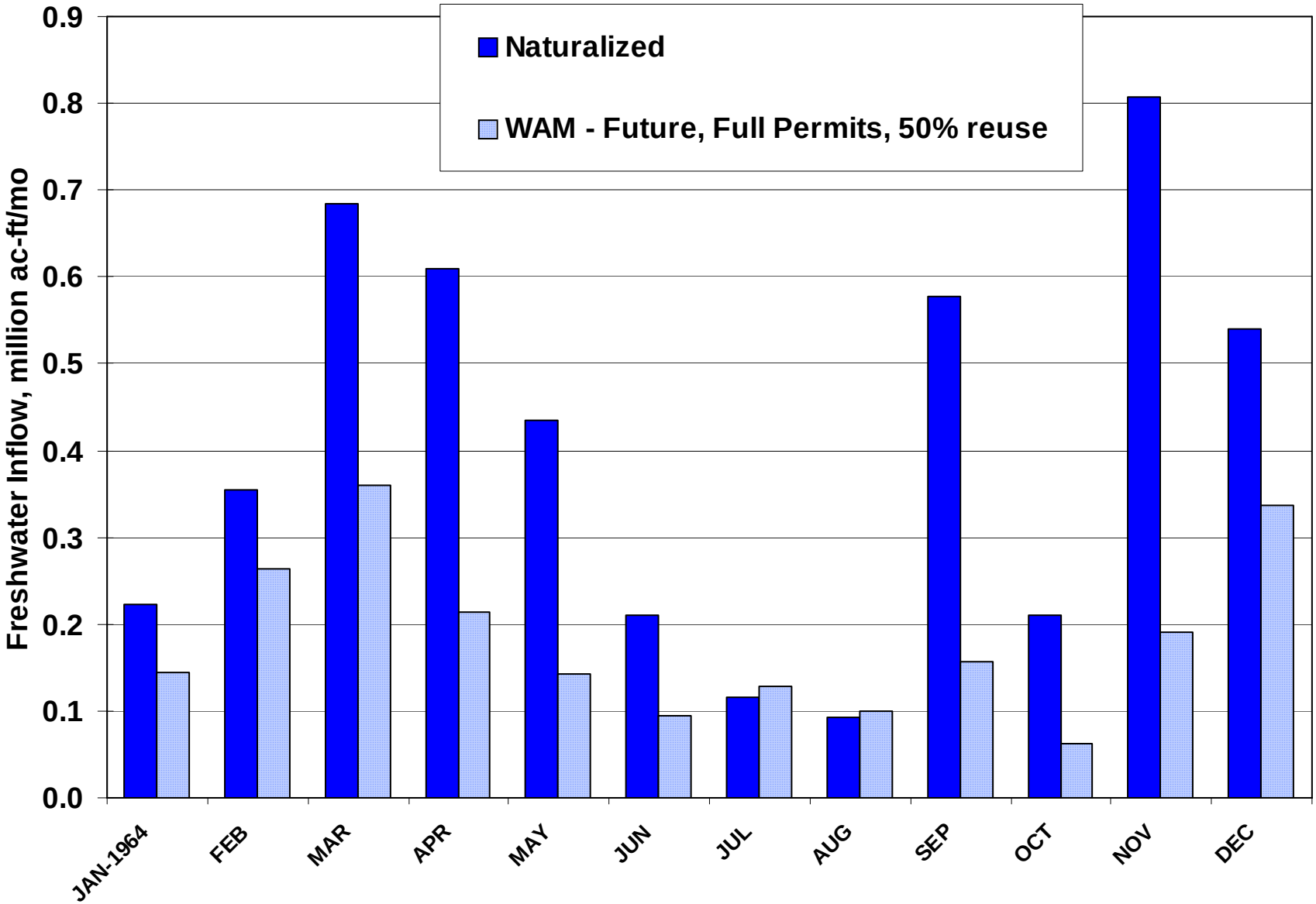
NATIONAL WILDLIFE FEDERATION

Water Availability Model (WAM)

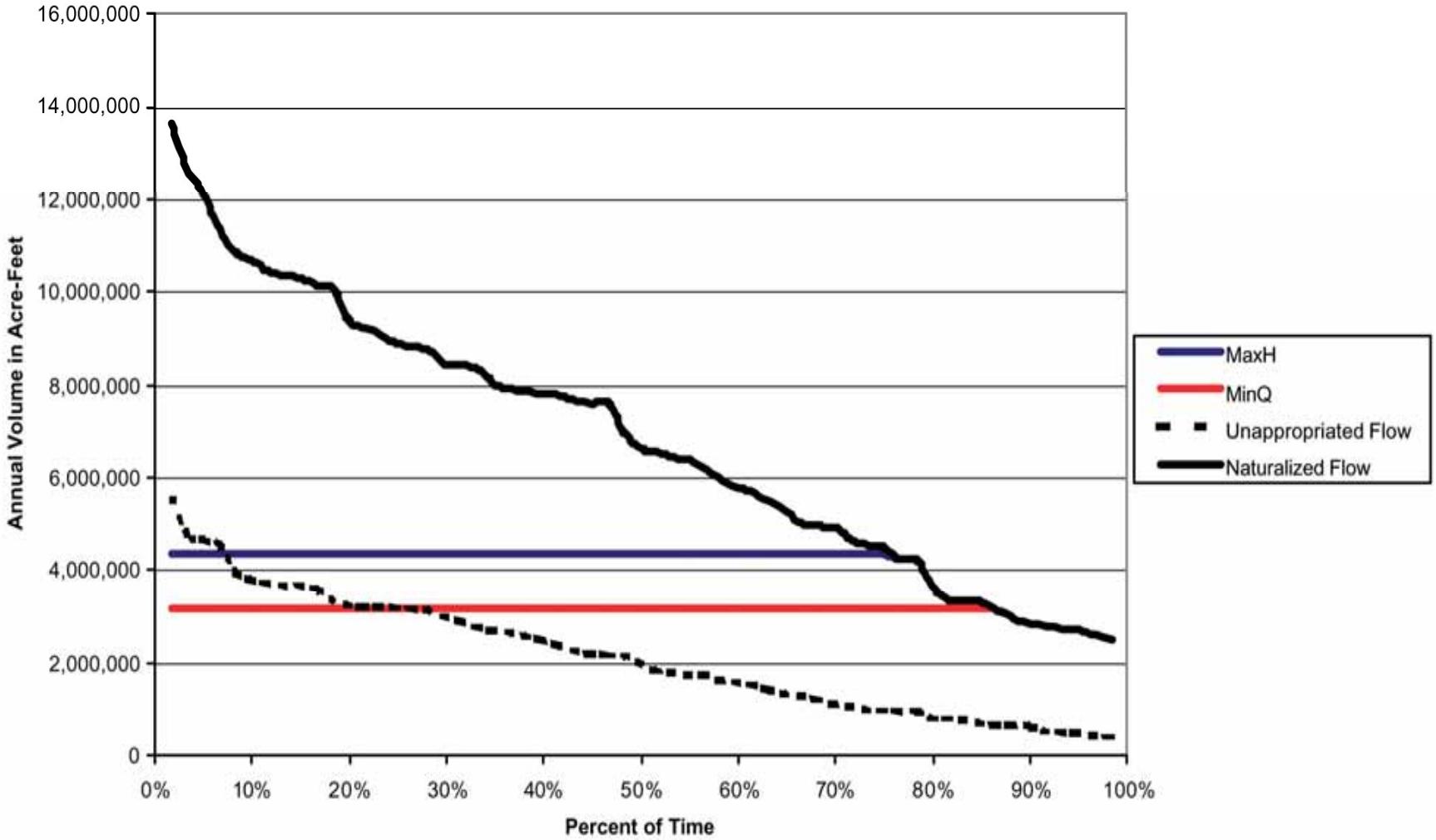


=computer-based simulation predicting the amount of water that would be in a river or stream under a specified set of conditions

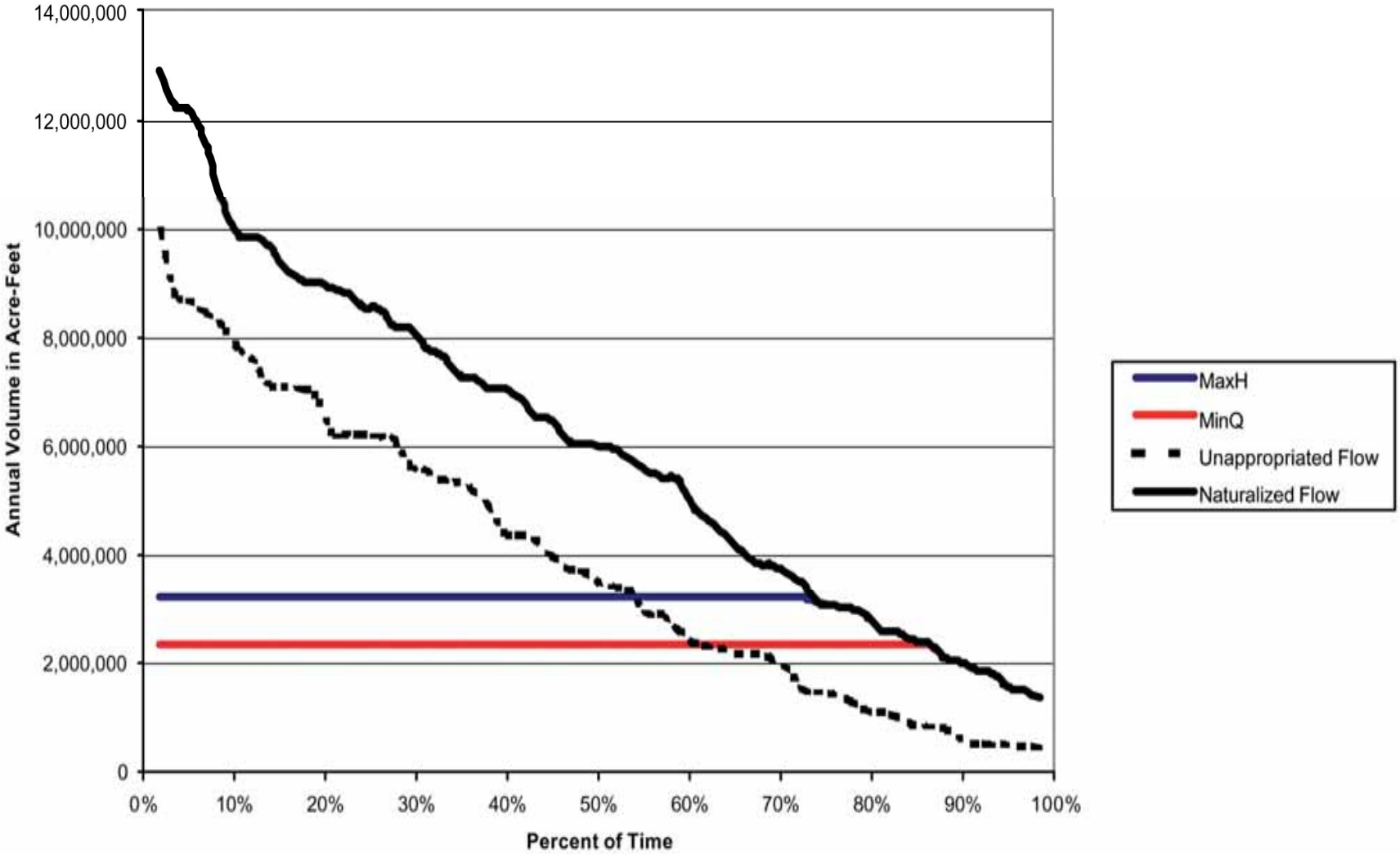
Galveston Bay, WAM-Predicted Freshwater Inflows

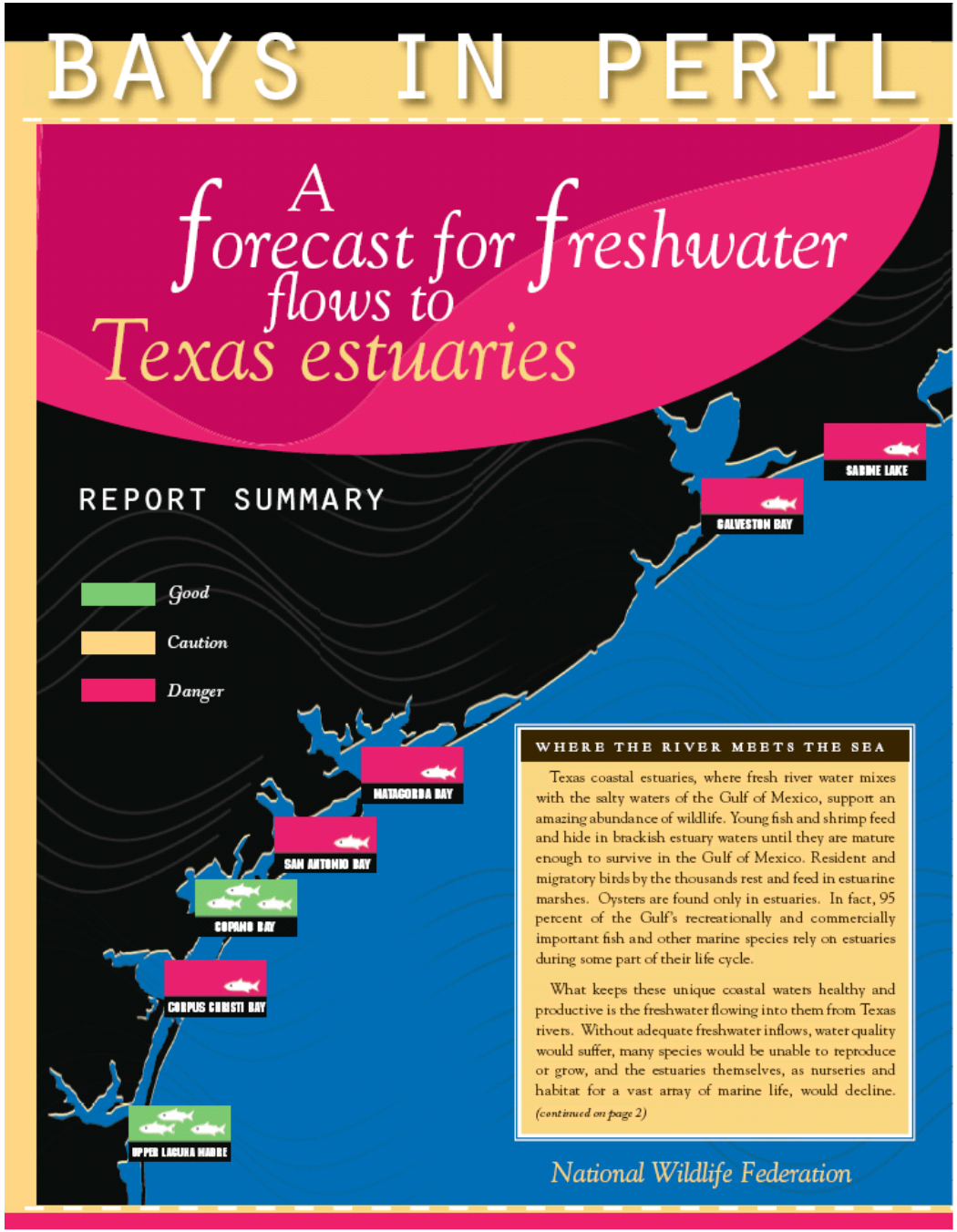


Attachment 8:
Available Flow
Sabine River at Sabine Lake



Attachment 9:
Available Flow at the Salt Water Barrier
Neches River Basin

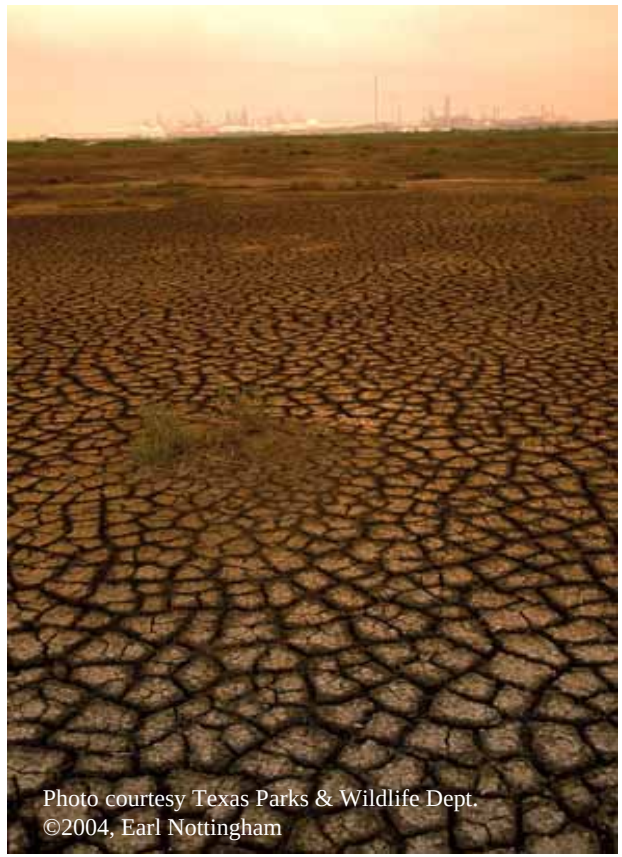




- What if all existing water permits were fully used and wastewater reuse increased to 50%?
- A likely scenario in the not-too-distant future?

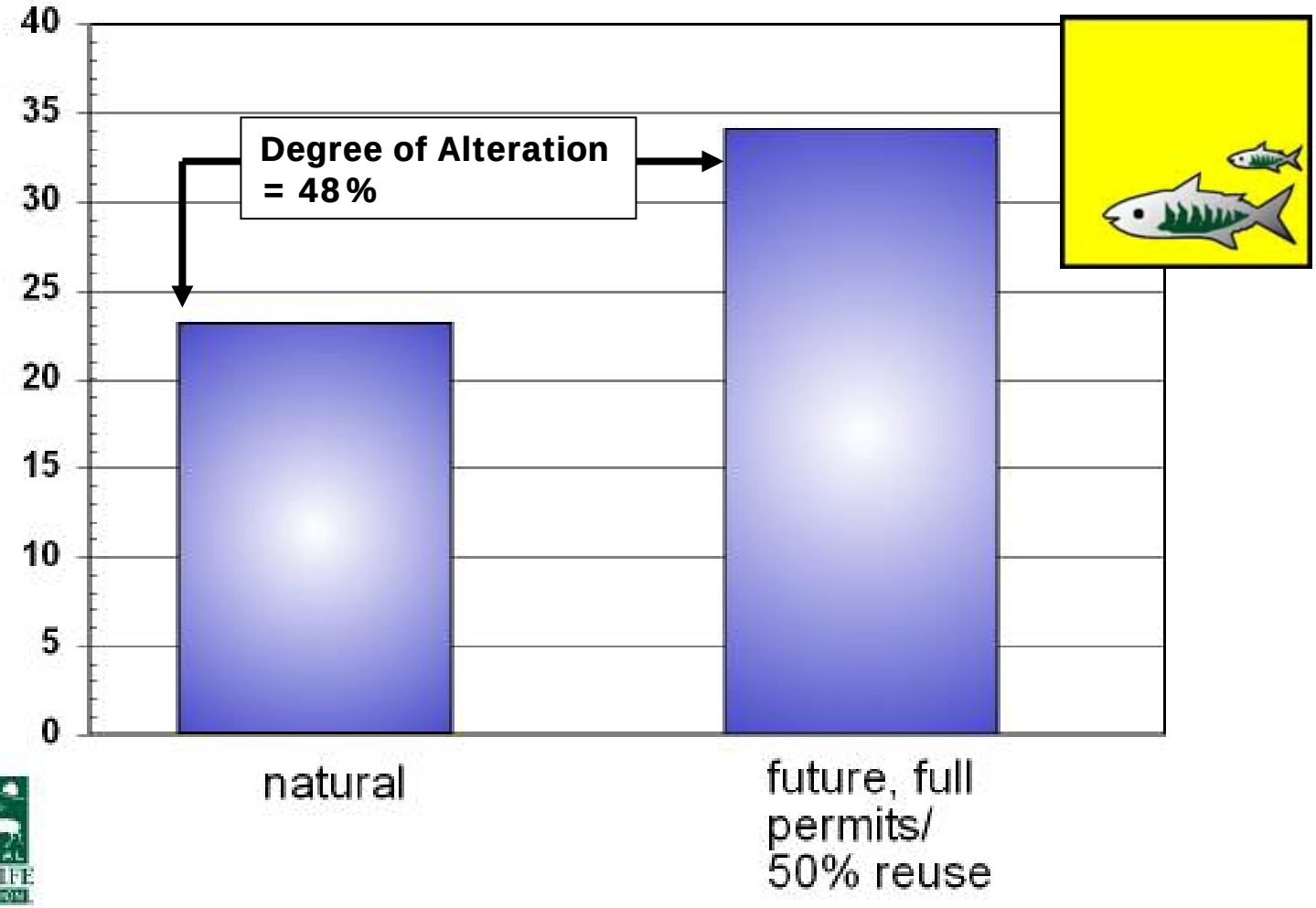
Two Inflow Criteria Critical to Bay Health:

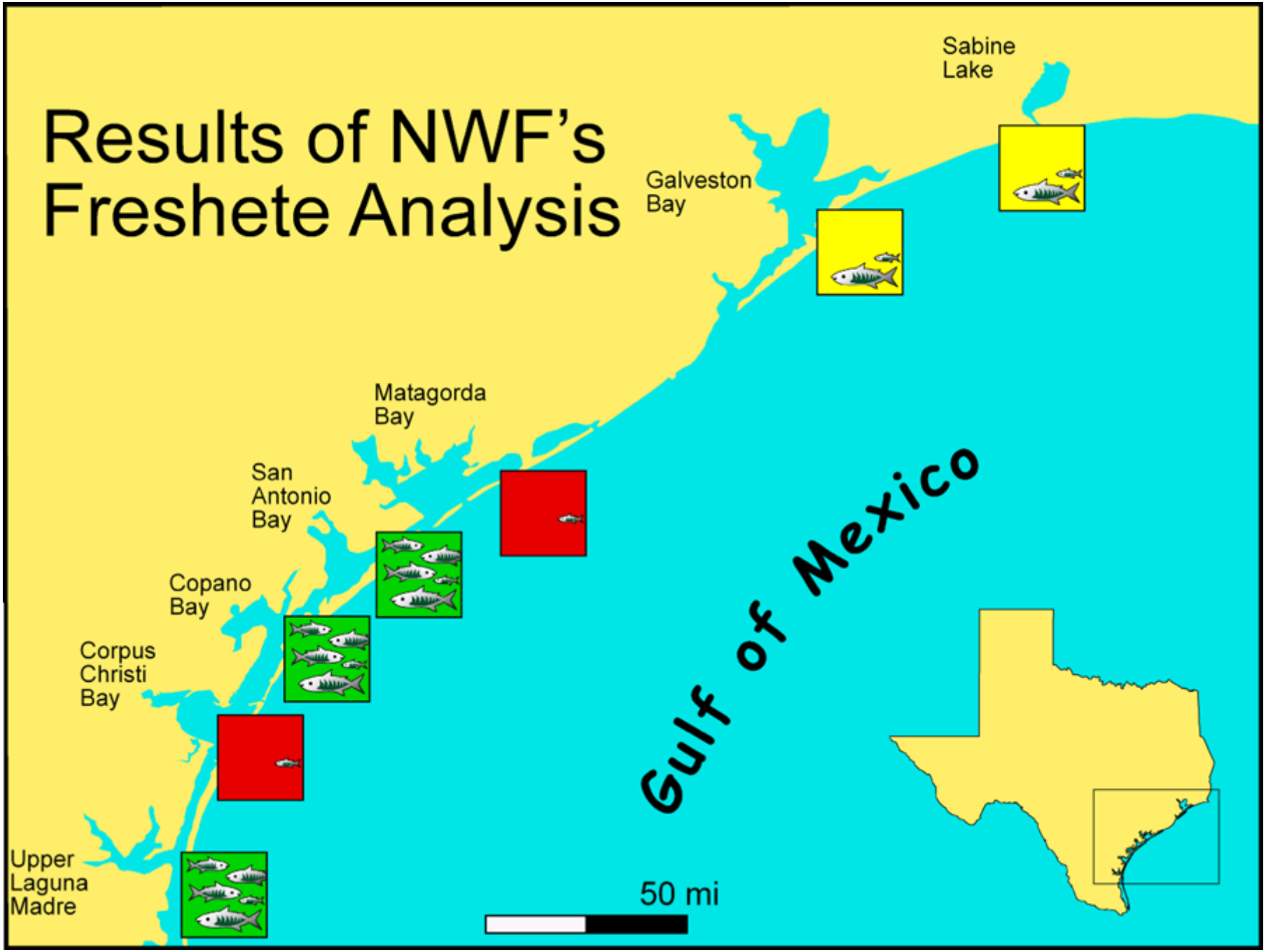
In the Best of Times...
Freshwater Pulses



In the Worst of Times...
Drought Tolerance

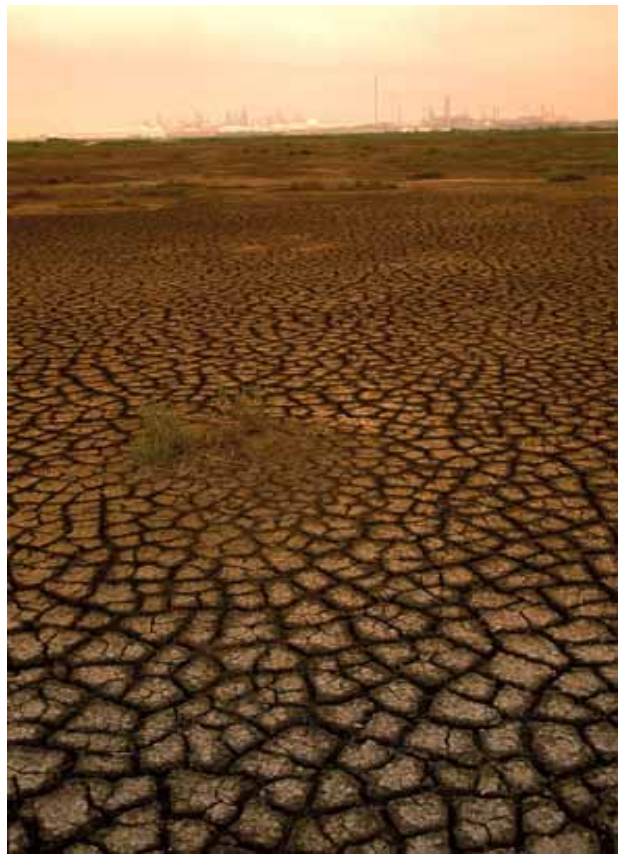
Sabine Lake - years with low spring pulse inflow




Results of NWF's Freshete Analysis
Sabine Lake
Galveston Bay
Matagorda Bay
San Antonio Bay
Copano Bay
Corpus Christi Bay
Upper Laguna Madre
Gulf of Mexico
50 mi

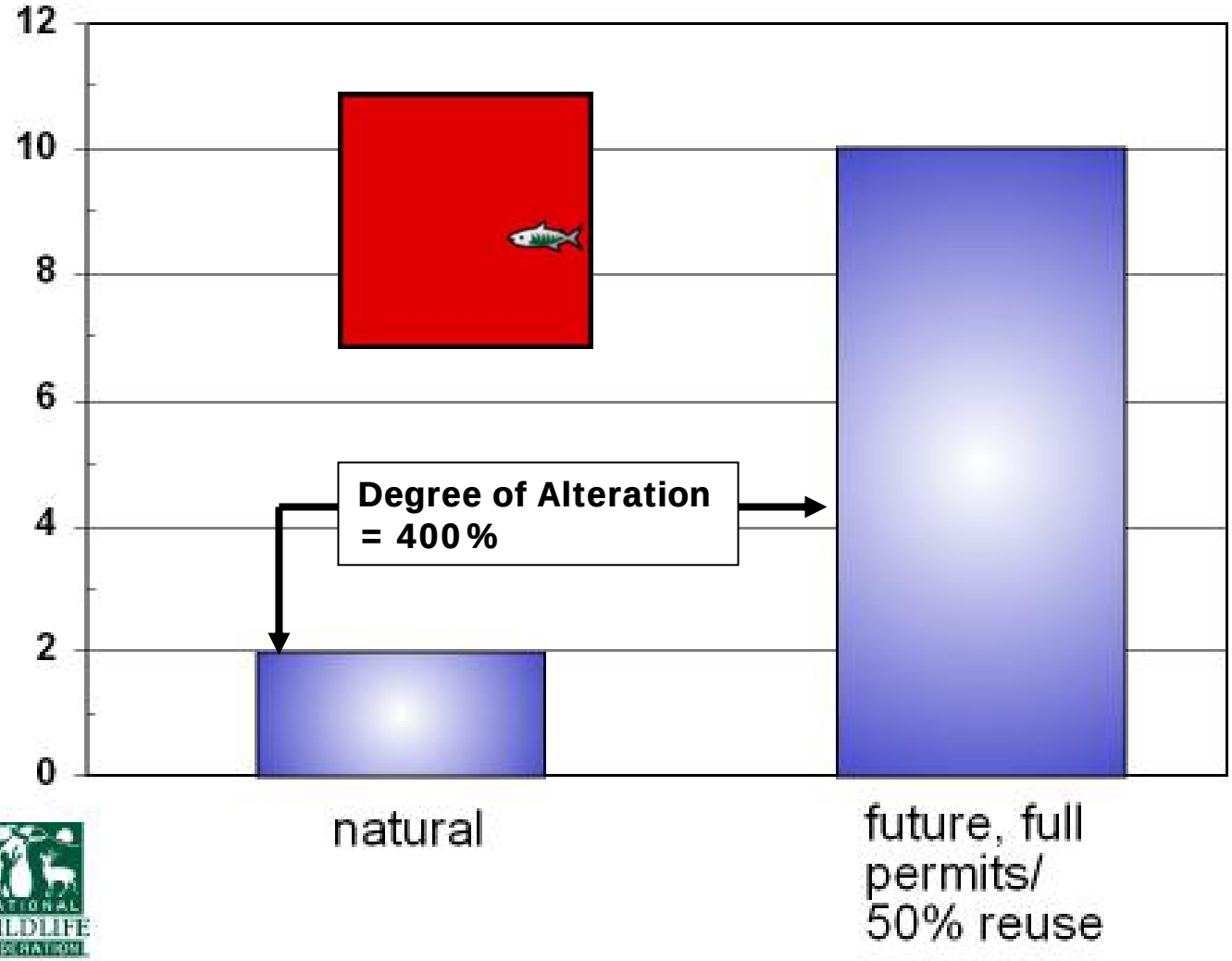
Two Inflow Criteria Critical to Bay Health:

In the Best of Times...
Freshwater Pulses

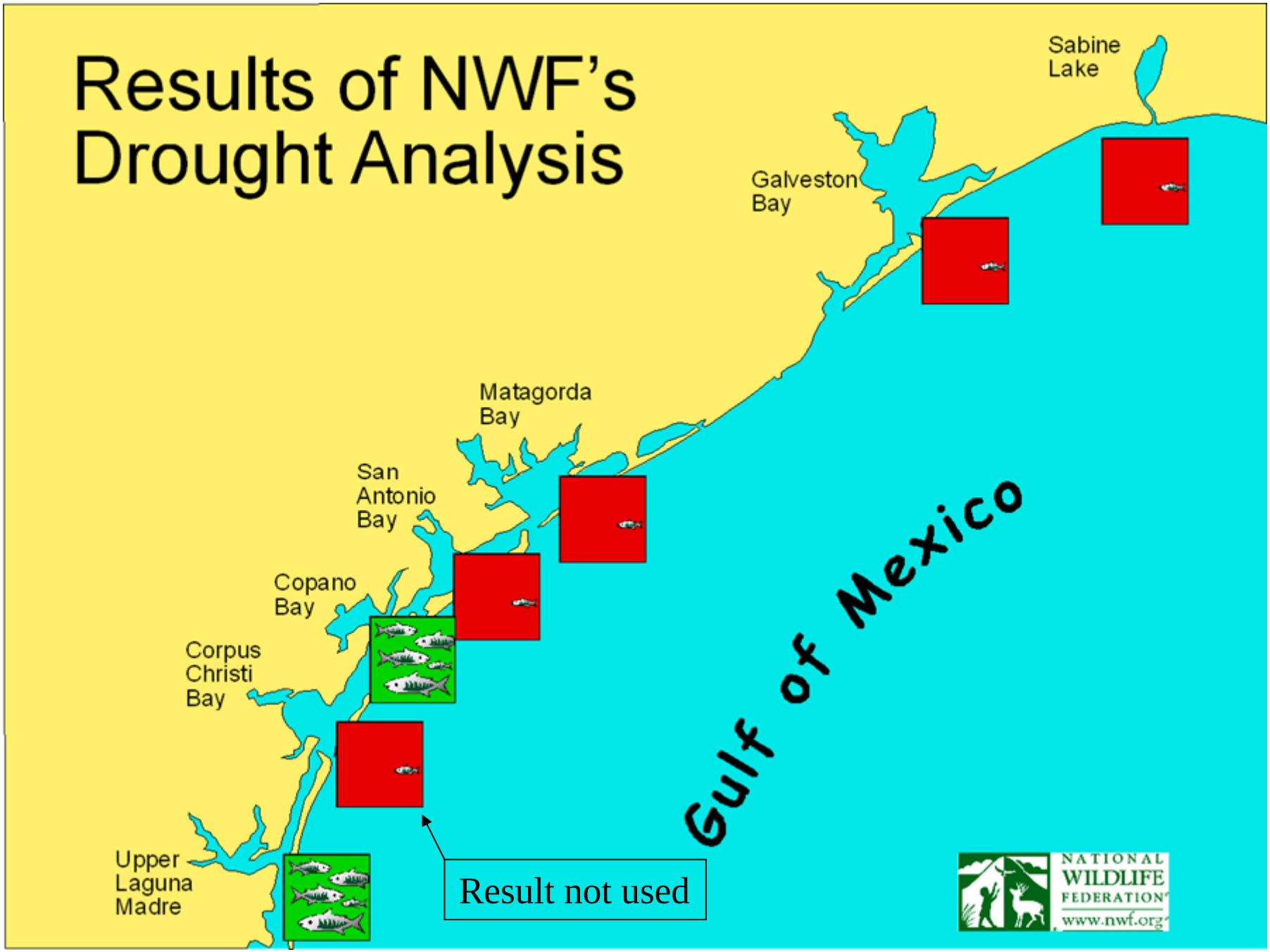


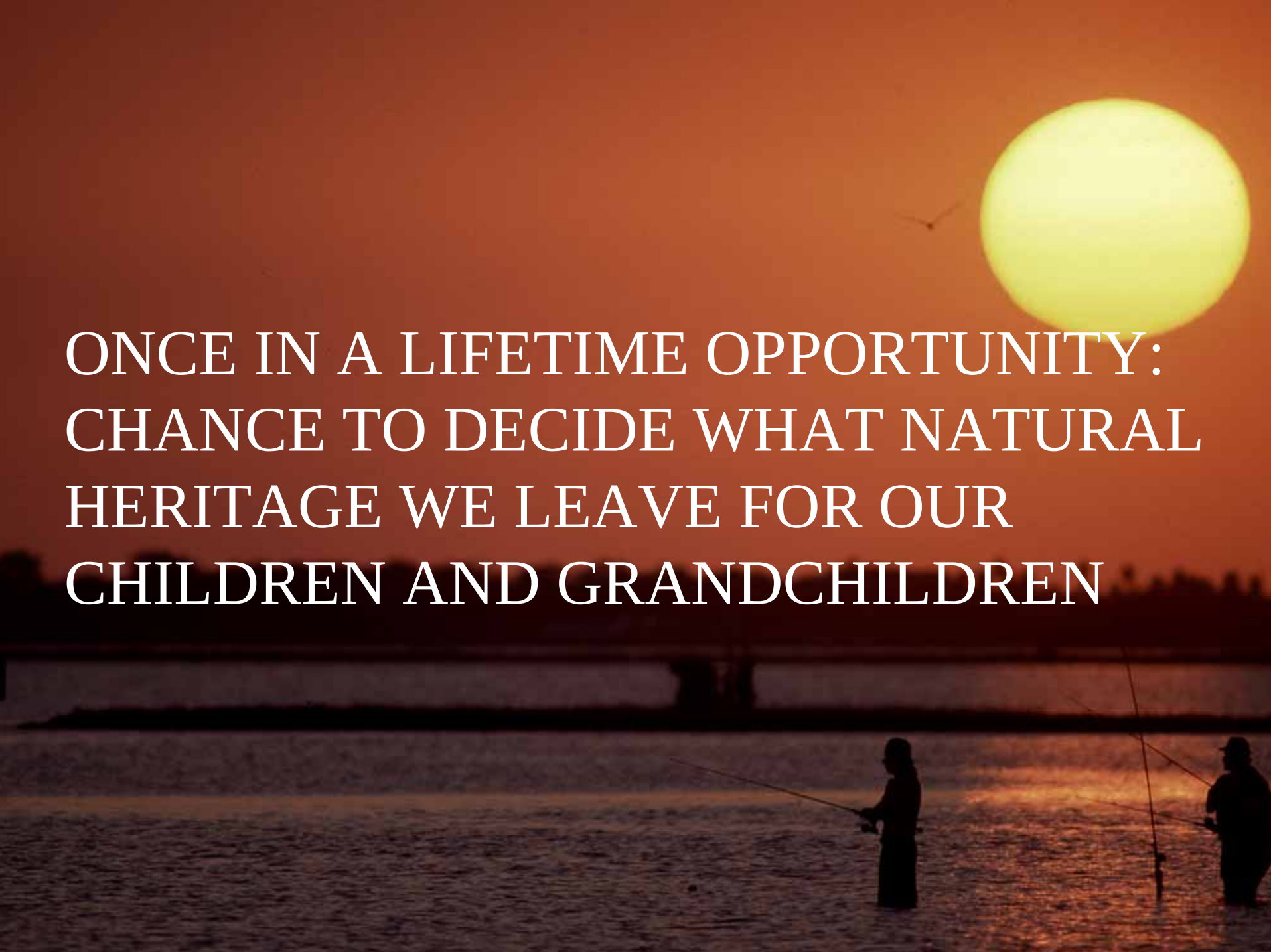
In the Worst of Times...
Drought Tolerance

Sabine Lake - number of extreme 6 mo. droughts.



Results of NWF's Drought Analysis




ONCE IN A LIFETIME OPPORTUNITY:
CHANCE TO DECIDE WHAT NATURAL HERITAGE WE LEAVE FOR OUR CHILDREN AND GRANDCHILDREN

PROTECTION OPTIONS

- CONDITIONS ON NEW PERMITS
- INSTREAM FLOW WATER RIGHTS
- RESERVATIONS OF WATER
- CANCELLATION OF UNUSED RIGHTS
- PURCHASE/DONATION
- CONDITIONS ON TRANSFERS
- CONSERVATION/DEDICATION
- DEDICATION OF PORTION OF RETURN FLOWS