Results of Priority WQPP Activities Survey (5.0 highest)

1. Water quality monitoring –continue to conduct long-term water quality monitoring to provide broad-scale status and trends ecosystem information (4.6)

2. Coral Reef Evaluation and Monitoring Program (CREMP) – implantation of the long-term coral monitoring program (4.6)

3. Implement monitoring programs to assess the effects of wastewater / stormwater infrastructure improvements, canal restoration, BMPs, etc. (4.4)

4. Seagrass/benthic habitat monitoring – implementation of long-term seagrass monitoring program (4.4)

5. Implementation of the Monroe County Canal Management Plan, continue demonstration canal restoration projects – W.10 (4.4)

6. Complete implementation of the Monroe County Wastewater Plan – W.3 (4.2)

7. Ensure adequate marine pump-out facilities to eliminate discharge of waste from vessels into the Sanctuary – L.1 (3.8)

8. Identifying potential impacts of sea level rise on water quality and natural resources and developing plans and projects to reduce those impacts (3.6)

9. Restoring freshwater flow to Florida Bay from the Everglades – W.19 (3.5)

10. Institute stormwater education programs to educate public regarding the use and disposal of fertilizers, herbicides, pesticides, hazardous chemicals – W.14 (3.5)

11. Develop stormwater ordinances to control fertilizer, herbicide, pesticide application on landscapes – W.14 (3.5)

12. Reduce loadings of sediment, toxics, and nutrients to Sanctuary waters through engineering methods applied to stormwater hot spots – W.11 (3.4)

13. Stronger enforcement of regulations to reduce marina and boat pollution within the Sanctuary – B.7 (3.3)

14. Reduce marina pollution through appropriate infrastructure, education and enforcement programs – L.3 (3.3)

15. Assess the negative impact(s) of Florida Bay on Sanctuary resources – W.24 (3.2)

16. Research the impacts of personal/household use of pesticides and herbicides on Sanctuary resources by Florida Keys residents – W.18 (3.1)

17. Support the Florida Keys Water Watch Citizen Monitoring Program (3.1)

18. Increase the availability of mobile pump-out services – L.6 (3.1)

19. Evaluate the ecological importance of the hard bottom sponge communities on water quality and marine life in the Sanctuary (3.0)

20. Implement stricter stormwater management / permitting – W.12 (3.0)

21. Continue to produce and promote Waterways Television programs (2.9)

22. Research the impacts of current mosquito control practices on non-target organisms within the Sanctuary and identify alternative means of mosquito control – W.18 (2.8)

23. Better understanding the threat of endocrine disruptors (pharmaceuticals, antibiotics, hormones, sunscreen) and developing plans and projects to reduce those threats – W.22 (2.8)

24. Reduce stormwater pollution from marina/boat maintenance areas – L.3 (2.7)

25. Establishment of additional mooring fields in the Sanctuary – L.1 (2.3)

Additional WQPP Priority Activity Recommendations

- Support the derelict vessel removal program and treat the derelict vessels as a source of pollution.

- Coastal Habitat Monitoring/Research of Mangroves. Mangroves act as a filter trapping many of the nutrients that could enter into the waterways. Nutrient analyses on mangroves prop roots or leaves can reveal loading into the system.

- Assessing impact of discharge of AWT on Sanctuary. Although BAT treatment technologies have been put in place, there remains the job of documenting and understanding the impact of discharged AWT effluent on the waters of the Sanctuary.

- Examine the 1 million GPD threshold for shallow vs. deep well injection based on latest information and experience. Alter regulations, or not, accordingly.

- Implement monthly water sampling, testing and analysis of nitrogen, phosphorous, chlorophyll and dissolved oxygen whenever shallow wells are in use anywhere in the Keys for wastewater treatment. If water quality deteriorates per DEP standards for the Keys ((TP=.009 mg/l, TN=.25 mg/l and chlorophyll=.3 ug/l), require the operators/owners of the wastewater treatment plant to immediately replace the shallow wells with deep wells.

- The impact of tourism on Keys reefs! Keys reefs are stressed in part due to millions of visitors annually. The carrying capacity of Keys reefs are unknown and currently there are no limitations in place for how many divers can access a reef in a day

- Assess ecological risk from insecticide exposure to key/sensitive Conduct toxicological tests on butterflies to evaluate ecological risks from exposure to commonly used insecticides.

- Develop programs to promote and encourage wastewater reuse. Reclaimed water could be used in marinas, golf courses, parks, landscape irrigation water, boat and marine equipment cleaning/rinsing; street cleaning, etc.

- Increased enforcement of FKNMS "no discharge zone.

- Review and assess FDEP's numeric nutrient regulatory program for the Key's coastal waters, which was adopted in Dec 2011. Are FDEP's regulatory standards being met? And if they are not, is there a corrective action plan?

- Study ecological impacts of ocean acidification on hard-shell marine invertebrates (larval stage) on coral reefs. Increased ocean uptake of CO2 is decreasing the oceans' pH level and is causing increase acidification. These changes need to be monitored.

- Ocean acidification – implementation of seawater carbonate chemistry measurements (pH/CO_2 monitoring)

- Identify impacts from climate change: increased temperature and reduce pH (ocean acidification), and synergistic effects when combined with chemical stressors.

- Enactment FKNMS Visitor Fee. It needs to be done! Applies to all activities in which Sanctuary resources are utilized (e.g. fishing, diving, birding, etc.). Not collected at hotels but vendors who utilized Sanctuary resources.

- Infrastructure development to account for rising sea levels and climate change.

- initiate a grade school module of water quality, targeting grades 4-5

- Develop modern “social media” education/outreach efforts that take advantage of new technology. This can still be in the vein of “Waterways” but more bite sized and snappy.

- Create an association of Florida Keys Marine Labs and research institutions

- Reestablish historic flows across U.S. 1 (mostly Marathon (Grassy & Fat Deer Keys), but to a limited extent elsewhere as well.