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BEST AVAILABLE SCIENTIFIC INFORMATION DOES NOT SUPPORT AN EXPANSION OF THE PACIFIC REMOTE ISLANDS MARINE NATIONAL MONUMENT

I. INTRODUCTION

A recent report to the US government purportedly describes scientific information that supports the need to expand the Pacific Remote Islands Marine National Monument.¹ The Western Pacific Regional Fishery Management Council (Council) believes this report to be agenda-driven propaganda that is misleading and replete with false linkages, and it does not provide the best available scientific information.

This current paper, prepared by the Council, provides scientific information on why expanding the Pacific Remote Islands Marine National Monument (PRIMNM) will not result in any discernable conservation benefit to coral reefs, tunas and other highly migratory species, seabirds, sea turtles, and marine mammals.

The Pacific Remote Island Areas (PRIA) include Wake Island, Baker Island, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, and Palmyra Atoll.

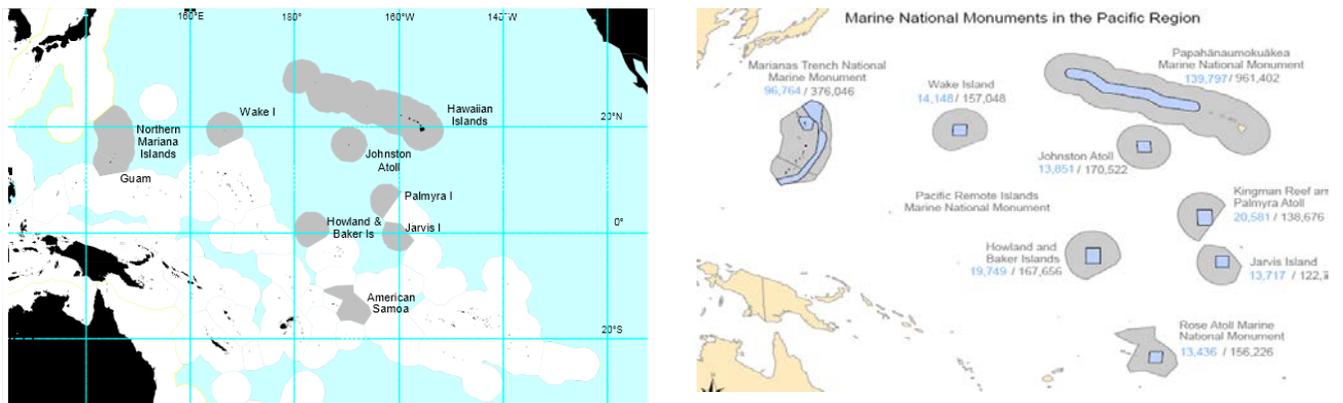


Figure 1: Map of the US Pacific Islands Region including the PRIA and boundaries of existing Marine National Monuments

Source: WPFMC (left), NOAA Fisheries (right)

¹ Sala, E., L. Morgan, E. Norse, and A. Friedlander. 2014. Expansion of the US Pacific Remote Islands Marine National Monument: The largest ocean legacy on Earth. Report to the US government.

II. NO BENEFIT TO CORAL REEFS AND OTHER VULNERABLE MARINE HABITATS

a) Coral Reef Ecosystems

Coral reefs ecosystems are vulnerable to a variety of impacts including pollution, sedimentation, overfishing, water temperature, and potentially impacted from fossil fuel emissions leading to changes in ocean chemistry (i.e. ocean acidification).² The PRIA contain healthy coral reef ecosystems with minimal run-off and no fishing pressure. The proposed expansion of the PRIMNM will not have any beneficial impact to coral reef ecosystems because these areas are already protected by their remoteness and lack for the most part of human habitation.³

In 2009, President George W. Bush established the PRIA MNM that prohibited commercial fishing within 0-50 nm within these areas. Prior to the establishment of the PRIA MNM, there was little historical commercial and non-commercial fishing in nearshore areas of the PRIA. In fact, science-based protections established under the Coral Reef Ecosystems Fishery Management Plan were already in place in 2009, including no-take and low-use areas from 0-10 fathoms around all of the PRIA.⁴ After the PRIMNM was established in 2009, the Council added regulations that prohibit all fishing, including commercial, recreational, and non-commercial, within 0-12 nm of all the PRIA.⁵

The PRIA are low lying coral limestone and coral atolls with reef systems that generally do not extend beyond a 1 mile from shore. Beyond the reef's edge, the seafloor rapidly descends to thousands of feet deep, which is too deep to support reef building corals that need sunlight to grow. **There is no scientific support that closing the US Exclusive Economic Zone (EEZ) from 50 nm-200 nm will have any benefit to coral reef systems.** To say that the proposed closure will positively impact coral reefs is comparable to saying not watering your lawn in Seattle will save water in Tucson. The connection is implausible.



Figure 2: Aerial photo of Howland Island showing a narrow band of coral reef area
Source: NOAA

² Anthony, K., D. Kline, G. Diaz-Pulido, S. Dove, and O. Hoegh-Guldberg. 2008. Ocean acidification causes bleaching and productivity loss in coral reef builders. *Proc. Nat. Acad. Sci* 105 (45) 17442–17446.

³ The Nature Conservancy operates a research station at Palmyra Atoll and allows recreational fishing in the nearshore area. The Department of Defense operates a small military installation on Wake Atoll, which is inhabited by less than 150 people year around.

⁴ 69 *Federal Register* 8336, February 24, 2004.

⁵ The US Fish and Wildlife Service also administers emergent land out to 12 nm as National Wildlife Refuges in the PRIA.

Moreover, the notion that these undisturbed reefs represent a benchmark for other Pacific Islanders to aim for in terms of reef restoration is a fiction. Many Pacific archipelagos have uninhabited or lightly inhabited islands similar to the PRIA that can be used as examples of undisturbed reefs. The Pacific Islands need examples of well managed reef ecosystems in urban areas, since people are a major reef stressor. As such, the populated islands of Hawaii, American Samoa and Mariana Archipelagos are good examples of how people and reefs can coexist, rather than aiming for an exemplar in the absence of humans.

Further, all reefs will equally be at risk if ocean temperature and acidity rises, whether they are in reserves or not. Research in Papua New Guinea⁶ has shown that coral and coral reef fish biodiversity in marine protected areas (MPAs) declined just as severely as in reefs open to fishing when coral cover declined as a result of a major bleaching event and crown of thorns outbreak. In addition, other theoretical research has shown that not all species are equal winners in a MPA, and that biodiversity may actually decline with reduction and even extinction of prey species.⁷

b) Seamounts and Hydrothermal Vents

In manufacturing support for expanding the monuments, proponents have painted a picture that existing, well managed US fisheries operating in the area pose a threat to seamounts and other vulnerable habitats such as hydrothermal vents. Such a relationship is again fiction. US purse seine and longline fisheries operating in the US EEZ around the PRIA do not make contact with bottom substrate, as opposed to bottom trawling, which does contact the bottom to catch demersal species. The Western Pacific Council prohibited bottom trawling in US waters of the western and central Pacific in the late 1980s.

The seamounts that occur in the US EEZ around the PRIA are thousands of feet below the surface. Their depth is such that purse seining and longline fishing represent no threat to these seamounts. **Depicting that seamounts are vulnerable from pelagic purse seine and longline fisheries that occur on the surface and upper water column is spurious and without scientific basis.**

III. NO CONSERVATION BENEFIT TO TUNA AND OTHER HIGHLY MIGRATORY SPECIES

Proponents for expanding the monuments often cite an article claiming that estimated 90% of all large predatory fish worldwide have been wiped out. However, the study that came up with the

⁶ Jones, G.P., M.I. McCormick, Maya Srinivasan & Janelle V. Eagle. 2004. Coral decline threatens fish biodiversity in marine reserves. Proc. Nat. Acad. Sci. 101 (21) 8251-8253.

⁷ Takashina, N. A. Mougi & Y. Iwasa. 2012. Paradox of marine protected areas: suppression of fishing may cause species loss. Popul. Ecol. 54, 475-485.

90% figure has been comprehensively rebutted by leading experts on the status of tuna and other pelagic fish stocks.⁸

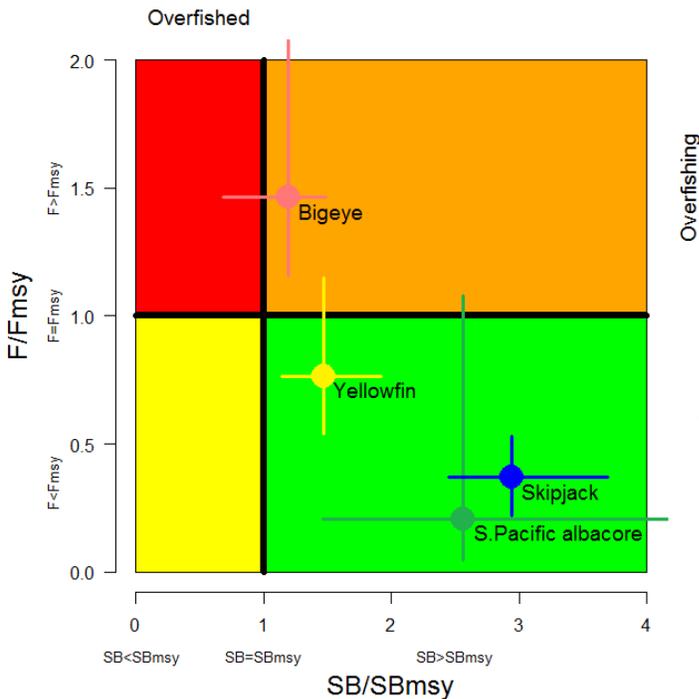


Figure 3: Stock status of bigeye, yellowfin, skipjack, and S. Pacific albacore in the WCPO.
Source: Secretariat of the Pacific Community (2013)

In the WCPO, the biomass of all tropical tuna stocks are currently above that level that will produce maximum sustainable yield, thus they are not considered overfished.

To suggest that the expansion of the monument would address overfishing of tuna stocks is not supported by science information. With respect to tropical tuna stocks in the Pacific, only bigeye tuna is currently considered to be experiencing overfishing in the WCPO.⁹

The areas proposed to be closed by President Obama are token closures and will have no impact on bigeye stock status or the status of other tunas in the Pacific Ocean. Tuna are considered high migratory, with individuals ranging from several hundred miles to several thousand miles in a lifetime. There is no scientific information that suggests that the size of the closures being proposed will have any impact on tunas, positive or negative. This is because the areas proposed are too small to impact the stock status of large tuna populations that span the Pacific Ocean.

⁸ Hampton, J. J.R. Sibert, P. Kleiber, M.N. Maunder and S.J. Harley. 2005. Decline of Pacific tuna populations exaggerated? Nature 434.

⁹ Overfishing occurs when fishing mortality (F) exceeds the fishing mortality estimated to produce maximum sustainable yield (F_{MSY}), $F/F_{MSY} > 1.0$.

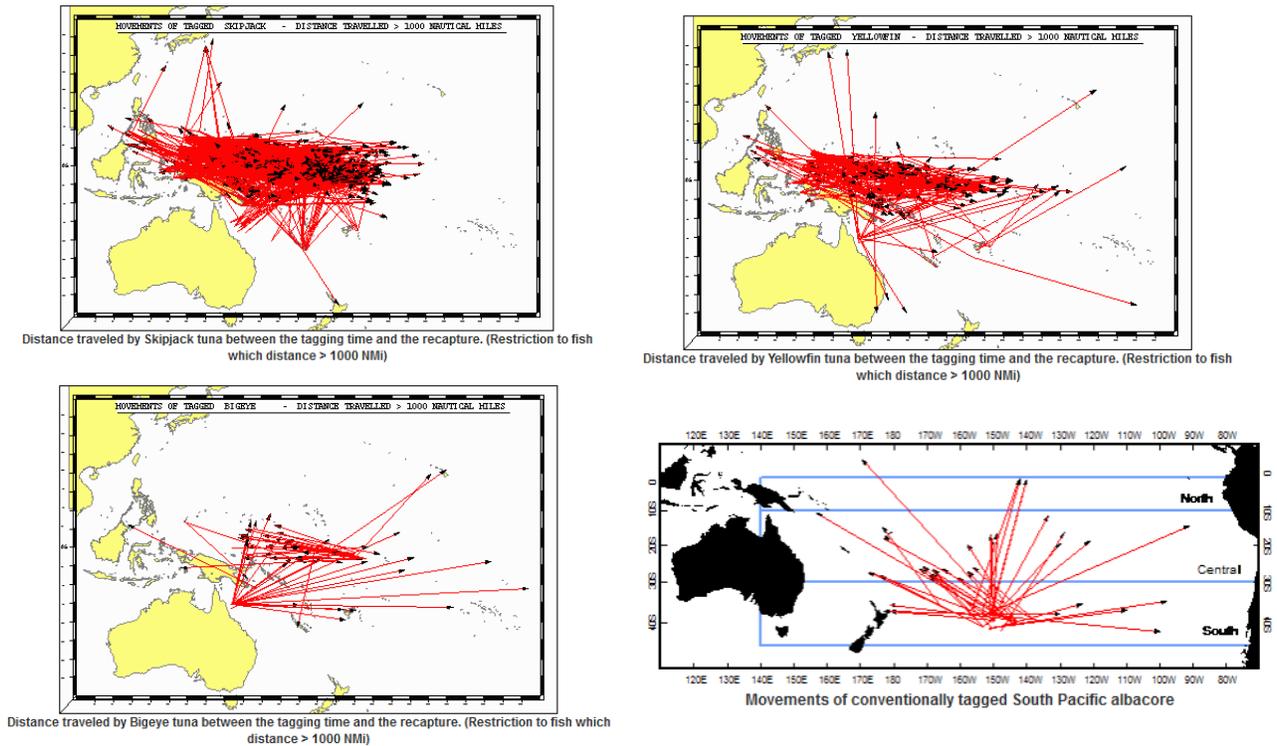


Figure 4: Movement of tuna stocks from tagging studies in the WCPO

Source: <http://www.spc.int/tagging/en/programs/rttp>

From 2010-2012, the Western and Central Pacific Fisheries Commission closed two high seas pockets in the Western Pacific to purse seine fishing. The size of the high seas pockets were a combined 1.7 million square miles, over 2 times the size of the proposed PRIMNM expansion. The result of the high seas pocket closure did not improve the stock status of targeted tuna species. However, what did occur was the displacement of fishing effort that otherwise would have occurred in the high seas into the EEZs of adjacent countries.¹⁰

As shown below, tunas are targeted across a wide swath of area in the WCPO, both on high seas and in EEZs. Small closures of the US EEZ will have no effect on the amount of tuna harvested in the region and no conservation benefit because these HMS stocks move in and out of the US EEZ.

¹⁰ Sibert, J., I. Senina, and P. Lehody. 2011. Prospectus for effective conservation of bigeye tuna stocks in the Western Central Pacific Ocean. Seventh Regular Session of the Scientific Committee. Pohnpei, FSM. WCPFC-SC7-2011/MI-WP-05.

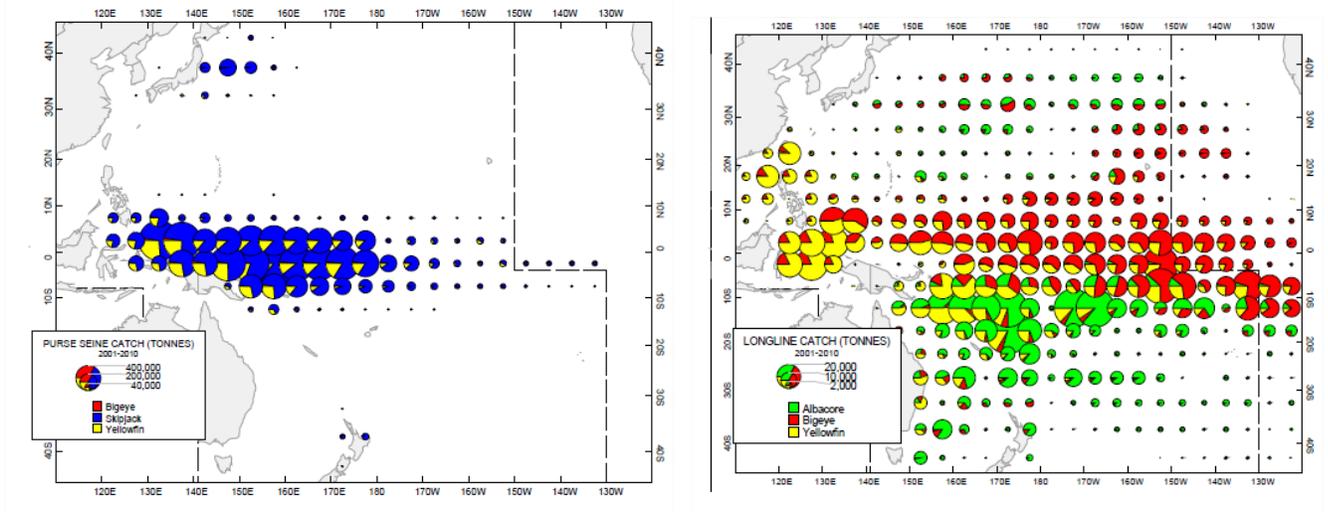


Figure 5: Cumulative catch totals of purse seine and longline fisheries in the WCPO, 2001-2010.

Source: SPC 2012

The best approach to management of tuna and other HMS stocks is to work cooperatively within the international community on science-based measures, monitoring compliance, and tough consequences for non-compliance (e.g. sanctions).

IV. LITTLE ADDED CONSERVATION BENEFIT TO SEABIRDS

Several species of seabirds nest on land in the PRIA, some of which make up among the largest seabird colonies in the world (e.g. red-footed booby colony on Palmyra).¹¹ The existing seabird colonies that nest and forage in the US EEZ contain some 14 million seabirds, and around the PRIA, their populations are not threatened by US fisheries. Further the high abundance of these seabirds suggests that they continue to flourish despite some of their nesting grounds lying in the general proximity of some of the most intensively fished areas of the Pacific, especially in the equatorial latitudes.

Seabird bycatch in the Hawaii deep-set longline fishery has been reduced significantly since regulations were implemented in 2001 to mitigate the accidental hooking of seabirds during gear setting¹². Mitigation measures implemented in the Hawaii fishery, including side-setting and blue-dyed bait, set an example for longline fleets worldwide. Similar conservation measures have been adopted as conservation measures for a number of Regional Fishery Management Organizations (RFMOs).

¹¹ US Fish and Wildlife Service. <http://www.fws.gov/pacificremotelandsmarinemonument/PRIMNM%20brief.pdf>

¹² Gilman, E., Kobayashi, D., & Chaloupka, M. 2008. Reducing seabird bycatch in the Hawaii longline tuna fishery. *Endangered Species Research*, 5(2-3), 309-323.

While higher latitude albatross in the North Pacific interact with longlines, equatorial nesting seabirds such as those found in the PRIA have little to no interactions with longlines or purse seine fishing gear. Further, the notion that the PRIMNM would provide additional forage for these seabirds is at best doubtful, given the highly mobile nature of both the predator and prey species. In addition seabirds that nest on the PRIA are migratory and forage well beyond the waters of the US EEZ, and as noted above, are found in spectacular abundances.

There is no scientific information indicating that purse seine and longline fishing in the PRIA are impacting seabird populations, either through direct interactions or indirectly by impacting availability of seabird forage. On the contrary, reduction of tuna populations at sustainable levels may have a positive benefit for the small pelagic fish and squid species not subject to predation from tuna, and hence providing more forage for seabirds.

V. LITTLE ADDED CONSERVATION BENEFIT TO SHARKS

No directed shark fisheries occur in the PRIA and the US Pacific Islands. There is a limited market in Hawaii for a small volume of shark flesh, primarily mako shark. Most of the sharks caught by the Hawaii longline fishery are blue sharks, and almost all sharks are released, with about 95% of them released alive. Moreover, the Hawaii longline fishery, through its various management measures for seabirds and sea turtles, has reduced its impact to sharks by about 50%.

Purse seine fishing on FADs sometimes involves the incidental catch of silky and oceanic white tip sharks; however, existing WCPFC and domestic measures prohibit retention of these species. All silky sharks and white-tip sharks caught by purse seiners and longliners must be released.

Like tunas, oceanic sharks are highly migratory species. Prohibiting fishing within the US EEZ around the PRIA will have little benefit on stock status of depleted shark species since the sharks will still be vulnerable to fishing mortality beyond the US EEZ.

VI. LITTLE ADDED CONSERVATION BENEFIT TO TURTLES

Proponents of monument expansion suggest an increased protection for sea turtles without explaining how this would build upon current conditions, which includes the existing 50 nm boundary of the PRIMNM. Specifically, proponents' argument suggesting that leatherback turtle migratory corridors could be protected by closing the PRIA EEZ is unfounded. Leatherback turtles migrating through the PRIAs nest in the Western Pacific including Indonesia, Papua New Guinea and Solomon Islands, and migrate as far as the U.S. West Coast. PRIA EEZ comprises only a small portion of their vast migratory corridor with the remainder located in high seas or foreign waters beyond the reach of any proposed Monument expansion. The areas surrounding

the PRIA EEZ are also not a significant foraging destination for Western Pacific leatherback turtles.¹³

Within the PRIA EEZ, leatherback and other sea turtle species are already strictly protected under the Endangered Species Act (ESA). Foreign vessels are not permitted to fish in the U.S. EEZ surrounding the PRIA, and as such commercial fishing in the PRIA is currently limited to U.S. vessels. U.S. fishing fleets must comply with the ESA. The Hawaii-based deep-set longline fishery, which occasionally operates in the PRIA EEZ, has a low interaction rate with sea turtles compared to the shallow-set fishery that operate at higher latitude waters far from the PRIA. The difference in interaction rate is primarily due to the hooks being set at depths not commonly used by sea turtles. The Hawaii-based deep-set longline fishery is monitored under a 20% observer coverage, which provides data to derive reliable fleet-wide estimates. Based on the observer data and the best available information on sea turtle status, the National Marine Fisheries Service determined that the Hawaii deep-set longline fishery is not likely to jeopardize sea turtle populations.¹⁴

Prohibiting commercial fishing by U.S. vessels in the PRIA EEZ is unlikely to have conservation benefit to sea turtle species. In fact, removal of U.S. fishing vessels in the form of closures can have net negative impact on sea turtles due to transfer effects.¹⁵ Demand for swordfish did not decline during the 2001-20014 Hawaii-based shallow-set longline fishery closure, resulting in increased imports of swordfish from countries known to have higher sea turtle bycatch rates than the U.S.

Longline and purse seine fishing by U.S. vessels are not contributing to sea turtle decline, and declines are attributed to a number of non-fishing threats such as egg collection, depredation of nests and destruction of nesting habitat.

VII. LITTLE ADDED CONSERVATION BENEFIT TO MARINE MAMMALS

A number of cetaceans observed around in the Central Pacific occur within the US EEZ around the PRIA. All cetaceans that are more coastally oriented are already protected by the existing 0-50 nm PRIMNM boundary.

All marine mammals, including cetaceans are protected under the Marine Mammal Protection Act. Expanding the PRIMNM will not add any major protection for cetaceans, especially if they move in and out of the US EEZ around the PRIA.

¹³ Benson, S. R., T. Eguchi, D. G. Foley, K. A. Forney, H. Bailey, C. Hitipeuw, B. P. Samber, R. F. Tapilatu, V. Rei, P. Ramohia, J. Pita, and P. H. Dutton. 2011. Large-scale movements and high-use areas of western Pacific leatherback turtles, *Dermochelys coriacea*. *Ecosphere* 2(7):art84. doi:10.1890/ES11-00053.1

¹⁴ NMFS. 2005. Biological Opinion for the Continued Authorization of the Hawaii-based Pelagic, Deep-set, Tuna Longline Fishery based on the Fishery Management Plan for Pelagic Fisheries of the Western Pacific Region.

¹⁵ Chan, H. L., and M. Pan. 2012. Spillover effects of environmental regulation for sea turtle protection: the case of the Hawaii shallow-set longline fishery. U.S. Dep. Commer., NOAA Tech. Memo., NOAA-TM-NMFS-PIFSC-30, 38 p. + Appendices.

VIII. CONCLUSION

The Council is not aware of any scientific information that indicates a need to expand the PRIMNM. **The main justification for the expansion is agenda-driven and not based on science, but rather a demonization of fishing that undermines current and future sustainable fisheries management.**

The call to expand the PRIMNM is not about science or conservation, but about building an environmental legacy for President Obama and placing a feather in the cap of corporate environmental non-governmental organizations.

Overall, expanding the PRIMNM will not result in net conservation gains to marine resources.

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